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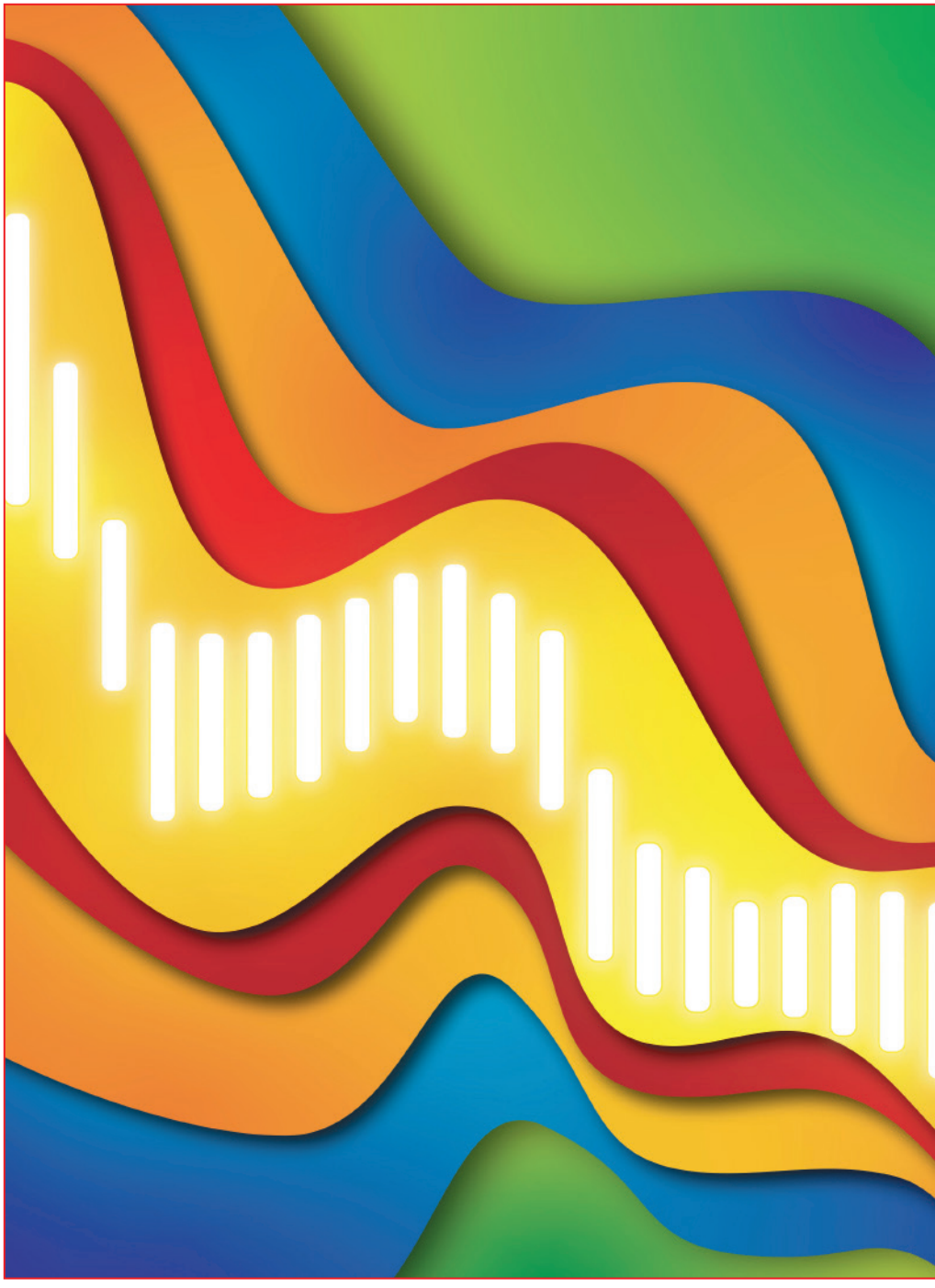

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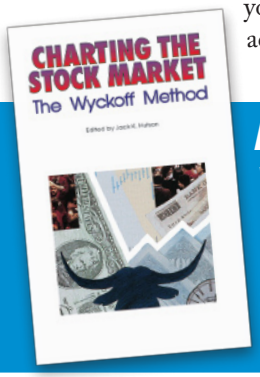

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TIPS This article is the basis for Traders' Tips this month.

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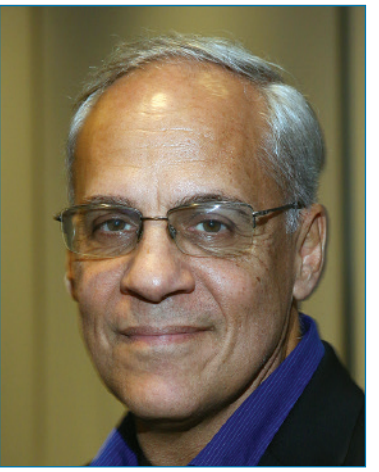


Jay Kaeppel

GOT A QUESTION ABOUT OPTIONS?

Jay Kaeppel has over three decades of experience in the options markets. He was a head trader for a CTA firm, an options trading software developer, and was a portfolio manager for an investment management firm. He is presently Senior Research Analyst for Sentimentrader.com. He is the author of several books, including The Four Biggest Mistakes In Option Trading*;* The Option Trader's Guide To Probability, Volatility, And Timing*; and* Seasonal Stock Market Trends. *Send your questions or topic suggestions to Jay Kaeppel at jay@sentimentrader.com. Selected questions will appear in a future issue of S&C.*

COLLARS

I would like to hedge a stock that I own around earnings. I have considered buying a put option, but often—due to high implied volatility around earnings—they are quite expensive. Is there a desirable alternative?

A useful strategy for temporarily hedging any stock position is referred to as a "collar." A collar involves selling a call option and using the proceeds to pay for all or part of buying a protective put position.

The Classic Collar Position

A classic collar position involves:

- Owning 100 shares of stock
- Selling 1 out-of-the-money call option
- Buying 1 out-of-the-money put option

The advantages are that the call option sold can pay for all or part of the put position, and the downside risk is limited thanks to the long put position. The disadvantage to this "classic" approach is that if an equal number of calls and puts are traded, the upside profit potential is also limited due to the short call.

So, let's consider a variation of the classic approach to try to maximize the advantages and minimize the disadvantages.

A collar involves selling a call option and using the proceeds to pay for all or part of buying a protective put position.

An Example Using NVDA

Prior to an upcoming earnings announcement, Nvidia shares (ticker NVDA) had rallied substantially (Figure 1).

Let's assume NVDA is scheduled to announce earnings on February 21. While the announcement is expected to be well received, the reality is that few things can cause a massive and immediate downdraft in a high-flying stock than a disappointing earnings announcement. So, an investor who is concerned about the potential for this scenario might consider a collar, which can put an absolute limit on downside risk.

For example, we will assume that an investor owns 500 shares of NVDA (presumably with a nice open profit), that they are concerned about the potential for earnings to knock the stock down and that they want to hedge against this possibility.

The approach detailed here is something I refer to as the "open collar." With this approach, we sell fewer call options (to retain some unlimited profit potential) and use the proceeds to pay for most or all of the cost of the put options.

This strategy may be preferable in any or all of the following situations:

- The investor is unwilling to cap the upside potential completely

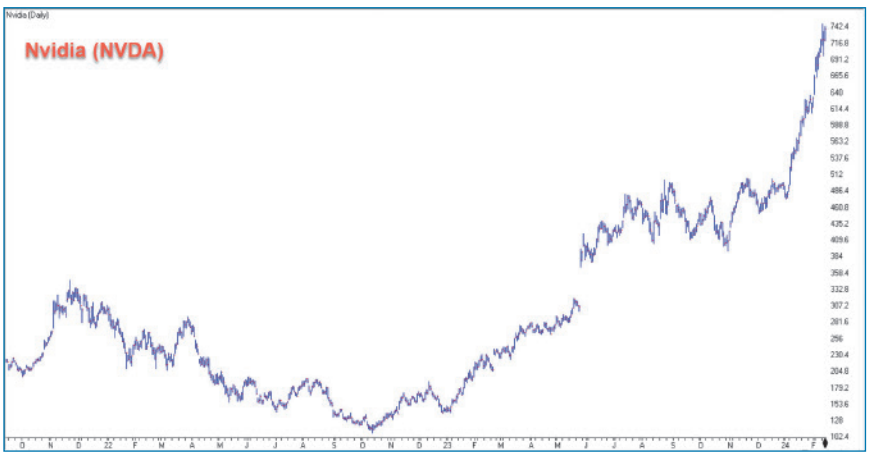


FIGURE 1: RALLY IN NVDA. Prior to an earnings announcement, Nvidia (NVDA) had rallied substantially, making buying protective puts expensive. A "collar" is one possible option strategy the trader can employ to help defray the cost of the put and to cap downside risk.

- The investor does not want to pay out cash to enter a hedge
- The investor is only interested in hedging against a significant decline in the stock

Once again, we will use options expiring on 2/23/2024. With NVDA shares trading at $739.00 a share, we will do the following:

- Hold 500 shares of NVDA trading at $739.00
- Sell 4 Feb 23, 2024 870 strike price calls @ $11.65
- Buy 5 Feb 23, 2024 650 strike price puts @ $8.98

The particulars for this position appear in Figure 2.

The risk curves (i.e., the expected dollar profit or loss at a given price for NVDA shares as of a given date) appear in Figure 3 (the black line represents option expiration day).

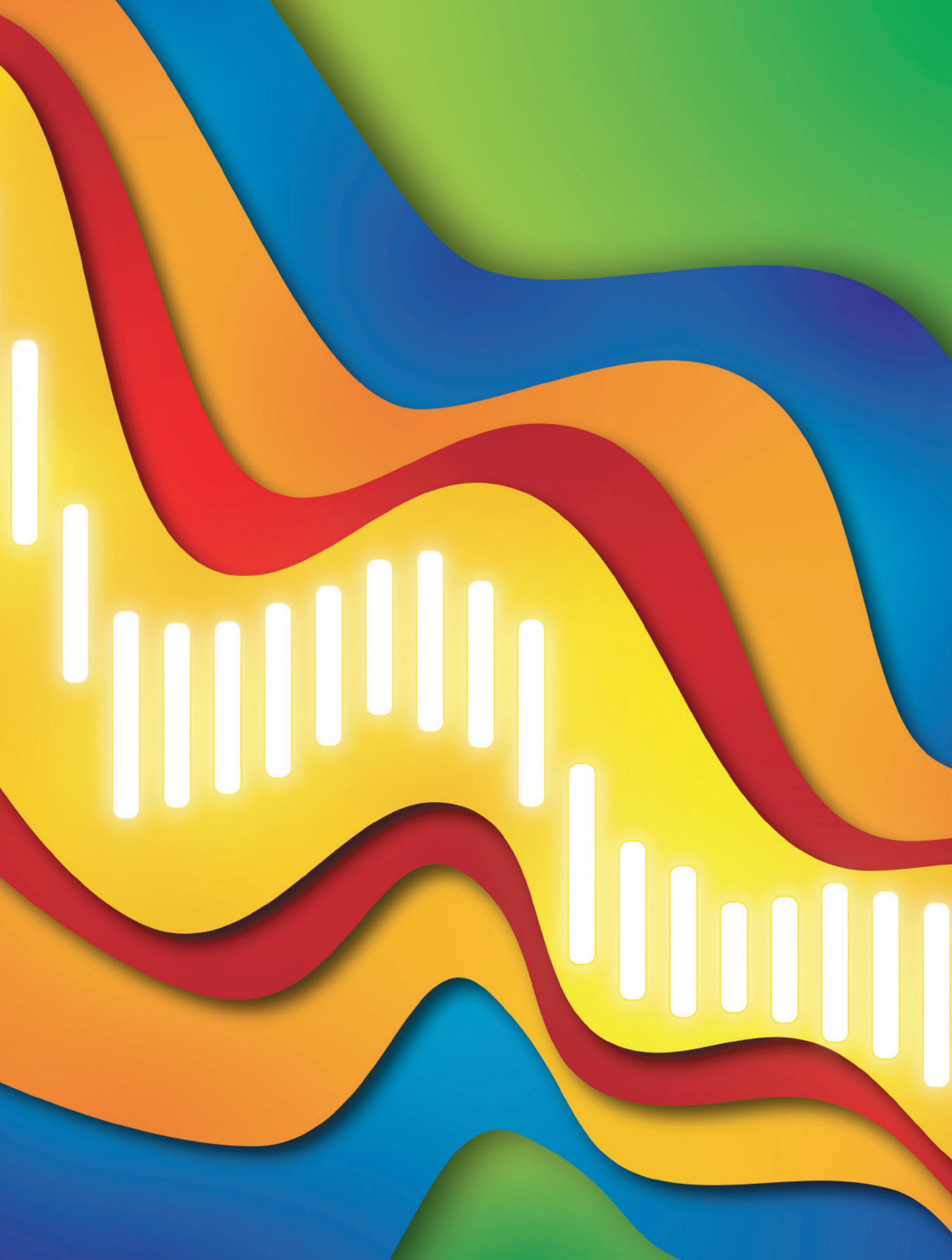
A few things to note:

- The current value of the stock position is $369,500
- We receive $4,660 for selling the calls ($11.65 × 400)
- It costs $4,490 to buy the protective puts ($8.98 × 500)
- In this scenario, the calls pay entirely for the puts, and we receive a credit of $170
- Because we are selling 4 calls, if NVDA trades above the call strike price of $870, we could have 400 shares called—however, we would still hold 100 shares of stock (i.e., we retain some unlimited profit potential if the stock shares soar)

The good news for this position is:

- We actually get paid $170 to enter

Continued on page 49



Getting The Lag Out Of Two Classic Indicators

Ultimate Channels And Ultimate Bands

Last time, we introduced an advancement in quantitative analysis for smoothing data with less lag: a new filter called the UltimateSmoother. Here, we show you how you can put it to use in your indicators.

A key element in the construction of Keltner channels and Bollinger Bands is the use of moving averages to determine the nominal center of their ranges. Use of moving averages in the indicators introduces lag, and lag leads to delayed entry and exit signals.

In my April 2024 article in this magazine I presented the UltimateSmoother technique I developed. In that article, I described its advantages for smoothing data with less lag and I detailed its construction.

In this article, I explore the use of the UltimateSmoother, instead of using moving averages, to mitigate indicator lag.

ULTIMATE CHANNEL

The Keltner channel uses an exponential moving average (EMA) to determine the center of the channel and average true range (ATR) to establish the width of the channel. The ATR has lag due to averaging as well as the lag due to the EMA. With reference to the code listing in the sidebar "The Ultimate Channel Indicator, In EasyLanguage," both averages are replaced with UltimateSmoothers.

The true high (TH) is the close of the previous bar if it is higher than the high of the current bar, otherwise it is the high of the current bar. Similarly, the true low (TL) is the close of the previous bar if it is lower than the low of the current bar, otherwise it is the low of the current bar. The true range is the difference between the true high and the true low. Rather than compute the ATR, the code mitigates lag by computing the smooth true range (STR) using the UltimateSmoother function. For flexibility, the length of the data used to compute the STR is an input variable. The upper channel value is computed as the UltimateSmoother of closes plus the STR times the input multiplier. Similarly, the lower channel value is computed as the UltimateSmoother of closes minus the STR times the input multiplier.

An example of the *ultimate channel indicator* is shown in Figure 1, where both *length* and *STRLength* are set to 20 and the *NumSTRs* is set to 1. Clearly, the channel has nearly zero lag. The channel limits can be smoothed by increasing the input *length* parameter. Doing this will modestly increase the indicator lag.

ULTIMATE BANDS

Bollinger Bands use a simple moving average to determine the center of the band and the standard deviations from it to establish the indicator band. Both increase the lag of the indicator. With reference to the code listing in the sidebar "The Ultimate Band Indicator, In EasyLanguage," both averages are replaced with UltimateSmoothers.

Smooth is the center of the indicator band. It is computed using the UltimateSmoother function. The deviation at each data sample is the difference between *smooth* and the close at that data point. The standard deviation (SD) is computed as the square root of the average of the squares of the individual deviations. The bands are computed as *smooth* plus or minus the input variable *NumSDs* times the SDs.

An example of the ultimate band indicator is shown in Figure 2, where the length is set to 20 and the NumSDs is set to 1. Clearly, the indicator band has nearly zero lag. The band limits can be smoothed by increasing the input length parameter. Doing this

by John F. Ehlers

TRADESTATION

FIGURE 1: ULTIMATE CHANNEL. The ultimate channel indicator has minimum lag (less lag than the Keltner channel, not shown here).

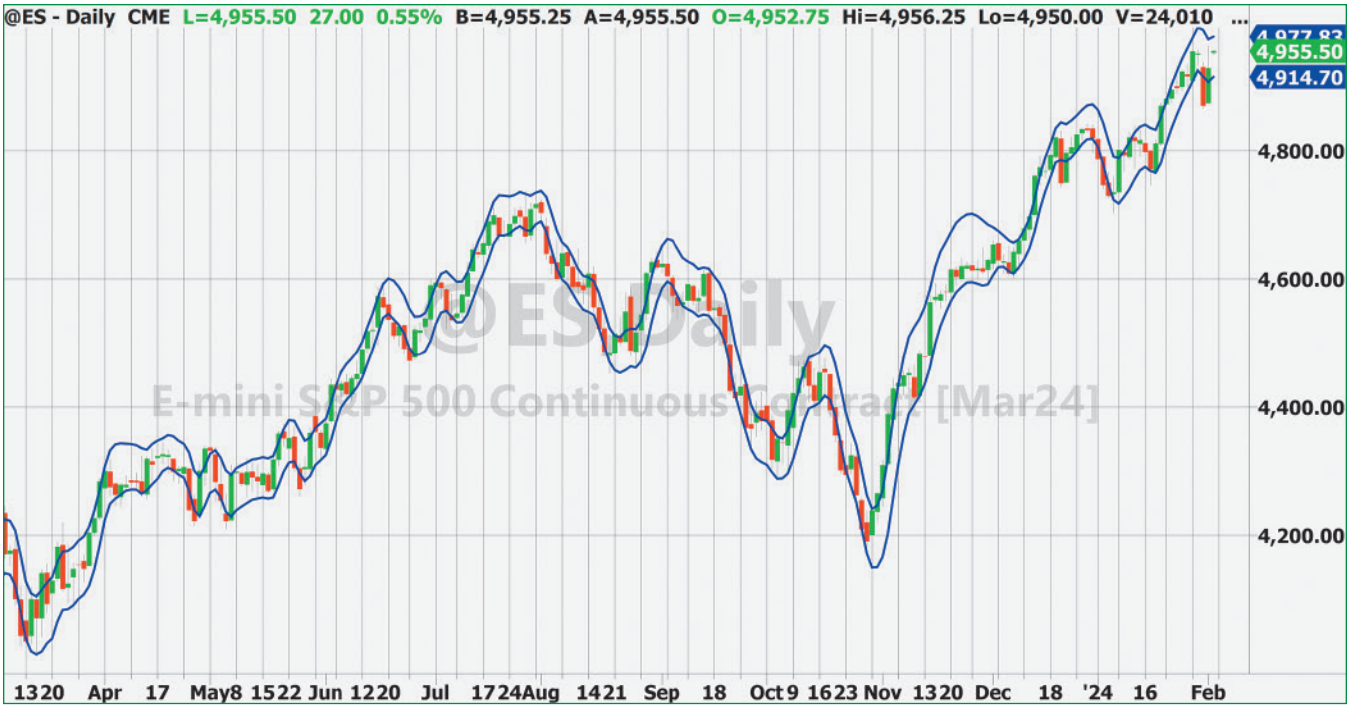


FIGURE 2: ULTIMATE BAND. The ultimate band also has minimum lag (less lag than Bollinger Bands, not shown here).

In this article, I explore the use of the UltimateSmoother, instead of using moving averages, to mitigate indicator lag.

will modestly increase the indicator lag. Interestingly, the ultimate band indicator does not differ from the ultimate channel indicator in any major fashion.

USE AND APPLICATION

The ultimate channel and ultimate band indicators can be used about the same way Keltner channels and Bollinger

THE ULTIMATE CHANNEL INDICATOR, IN EASYLANGUAGE

```
{
      Ultimate Channel
      (c) 2024  John F. Ehlers
}

Inputs:
      STRLength(20),
      Length(20),
      NumSTRs(1);

Vars:
      TH(0),
      TL(0),
      ROC(0),
      STR(0),
      UpperChnl(0),
      LowerChnl(0);

If Close[1] > High Then TH = Close[1] Else TH = High;
If Close[1] < Low Then TL = Close[1] Else TL = Low;
STR = $UltimateSmoother(TH - TL, STRLength);

UpperChnl = $UltimateSmoother(Close, Length) +
NumSTRs*STR;
LowerChnl = $UltimateSmoother(Close, Length) -
NumSTRs*STR;

Plot1(UpperChnl, "", Blue, 4, 4);
Plot2(LowerChnl, "", Blue, 4. 4);
```

THE ULTIMATE BAND INDICATOR, IN EASYLANGUAGE

```
{
      Ultimate Bands
      (c) 2024  John F. Ehlers
}

Inputs:
      Length(20),
      NumSDs(1);

Vars:
      Smooth(0),
      Sum(0),
      count(0),
      SD(0),
      UpperBand(0),
      LowerBand(0);

Smooth = $UltimateSmoother(Close, Length);

Sum = 0;
For count = 0 to Length - 1 Begin
      Sum = Sum + (Close[count] -
Smooth[count])*(Close[count] - Smooth[count]);
End;
If Sum <> 0 Then SD = SquareRoot(Sum / Length);

UpperBand = Smooth + NumSDs*SD;
LowerBand = Smooth - NumSDs*SD;

Plot1(UpperBand, "", Blue, 4, 4);
Plot2(LowerBand, "", Blue, 4, 4);
```

Bands are used to interpret price action. There is sufficient variation in the indicator displays over a wide range of instruments through the use of the input variables to make the indicators be a useful addition to your technical trading library. The main difference is that indicator lag is greatly reduced compared to the standard indicators.

A simple trading strategy is to hold a position in the direction of the UltimateSmoother and exit that position when the price pops outside the channel or band in the opposite direction. This is basically a trend-following strategy with an automatic following stop.

John Ehlers is a retired electrical engineer and a retired technical analyst, specializing in the application of DSP (digital signal processing) to trading. For more information, see www.mesasoftware.com.

FURTHER READING

Ehlers, John [2024]. "The Ultimate Smoother," *Technical Analysis of* STOCKS & COMMODITIES, Volume 42, April.

_____ [2014]. "Predictive And Successful Indicators," *Technical Analysis of* STOCKS & COMMODITIES, Volume 32, January.

Ehlers, John [2004]. *Cybernetic Analysis For Stocks And Futures*, John Wiley & Sons.

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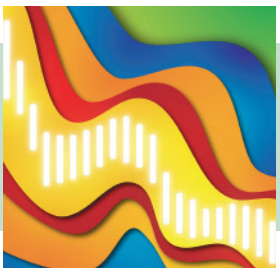
‡*See Editorial Resource Index*

The code given in this article is available in the ***S&C Article Code*** *section of our website, Traders.com.*

See our ***Traders' Tips*** *coding section of the magazine beginning on page 42 for implementation of John Ehlers' technique in various technical analysis programs and trading platforms. Code found in the Traders' Tips section is also posted to Traders.com.*

Both moving averages are replaced with UltimateSmoothers.



With A High-Yield Bond Fund

How Professionals Assign Risk

Risk versus return is the name of the game in trading. How does a fund manager set risk limits for a portfolio or fund that it manages? Here are some insights that could help you better manage your own portfolio.

by Perry J. Kaufman

Years ago (1992), when rates were higher, there were "guaranteed funds." If your account did not gain anything, you could withdraw your full investment after "maturity." The biggest promoter of these funds was ED&F Man (you can find a *New York Times* article from 12/19/1992 on it), one of the largest managed futures groups, with principal offices in London. It used a U.S. subsidiary, Mint, to promote it.

The way it worked was that part of the investment was put into bonds, with a guaranteed interest after five years. That interest then became the speculative amount that could be used to increase returns. If the trading generated a loss, the interest on the bonds would offset that loss and the investor got his/her original investment back after five years. Given the stock market crash in 1987, this marketing approach generated a lot of interest.

The guaranteed fund would be able to trade the amount of interest due at maturity in any way you want—futures, options, or any highly leveraged investment—in order to return 10% or 20% on a small part of the investment. That's a big order.

But as interest came down, the amount that you could trade became smaller, where you could not expect to generate enough return to make the investment worth holding for five years.

Could we see that approach become appealing again if rates were to return to the range of 7% to 10%? Possibly. But when Dean Witter (Principle Guaranteed Fund III) fell 15%, they liquidated everything and investors needed to wait four years to recover their investments. So volatility is the unknown.

Let's look at how a fund manager normally sets its risk limits.

THAT WAS THEN, THIS IS NOW

Every investor has a limit on what risk he is willing to take; we call that *risk aversion*. Some conservative investors will agree to a 10% drawdown, others to 50%. Usually, the amount you are willing to risk should somehow be offset by the potential gains.

Let's say that a systematic fund will not allow more than a 20% loss, at which point it will liquidate. How

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do you decide how much to trade in order to make 20% a relatively small chance of occurring?

First decide what you plan to trade. If you're a bond fund, that could be a fixed set of ETFs, much easier to decide. If you're an active trader of stocks, not so easy. But it's all in the probabilities plus some common sense.

	A	B	C	D	E	F	G	H	I	J	K
1	Date	JNK	HYG	MUB	BND	JNK	HYG	MUB	BND	Return	NAV
2	12/4/2007	46.5556	37.7893	65.9438	48.0123	0.25	0.25	0.25	0.25		100
3	12/5/2007	46.5654	37.3447	65.7422	47.9067	0.00021	-0.01177	-0.00306	-0.00220	-0.00420	99.580
4	12/6/2007	46.4487	37.6781	65.5147	47.6584	-0.00251	0.00893	-0.00346	-0.00518	-0.00056	99.524
5	12/7/2007	46.4779	37.6596	65.4302	47.5032	0.00063	-0.00049	-0.00129	-0.00326	-0.00110	99.415
6	12/10/2007	46.7015	37.604	65.4367	47.4163	0.00481	-0.00148	0.00010	-0.00183	0.00040	99.455
7	12/11/2007	46.6626	37.567	65.9178	47.7329	-0.00083	-0.00098	0.00735	0.00668	0.00305	99.758
8	12/12/2007	46.5459	37.7707	65.7878	47.6398	-0.00250	0.00542	-0.00197	-0.00195	-0.00025	99.733
9	12/13/2007	46.5556	37.7522	65.7227	47.3976	0.00021	-0.00049	-0.00099	-0.00508	-0.00159	99.575
10	12/14/2007	46.5556	37.8078	65.5667	47.2921	0.00000	0.00147	-0.00237	-0.00223	-0.00078	99.497
11	12/17/2007	46.5945	37.604	65.7162	47.4908	0.00084	-0.00539	0.00228	0.00420	0.00048	99.545
12	12/18/2007	46.7209	37.6411	66.0283	47.6025	0.00271	0.00099	0.00475	0.00235	0.00270	99.814

MICROSOFT EXCEL

FIGURE 1: CALCULATING DRAWDOWN PROBABILITIES. If you wanted to cap your portfolio losses at, say, 20%, how do you decide how much to trade in order to make it improbable that you will reach a 20% drawdown? Shown here is a portion of an example spreadsheet for gathering some useful metrics and probabilities for a bond fund.

A FIXED BOND FUND

In this example, we have a fund specializing in high-yield bonds. The ETFs for this are JNK, HYG, and MUB (municipal bonds). We'll throw in BND (Vanguard Total Bond Fund) to stabilize returns. In this case, we'll allocate 25% to each fund. We set up a spreadsheet, shown in Figure 1.

The bond data goes into columns B–E and the daily returns into columns F–I. The bond fund returns (column J) use the SUMPRODUCT, which assigns the allocations in F2–I2 to each of the returns in rows 3 and lower. The NAVs (column K) are, for example, K2*(1 + J3). The NAVs show us the total returns as seen in Figure 2.

What is the return and risk of this portfolio? If you are creating your own portfolio, you need to be able to do these calculations:

Annualized rate of return (AROR) = (Last net asset value/First asset value)^(252/Number of values)) – 1

Annualized standard deviation of daily returns (ASTD) = STDEV(daily returns)*SQRT(252)

In addition, the best "payout" is the information ratio (IR):

IR = Annualized rate of return / Annualized standard deviation (of the daily returns)

You can use the IR to compare with other portfolios to see that you are getting the best returns for the lowest risk.

Note that 252 is the number of trading days in the year. If you use weekly data, then change 252 to 52. For monthly data, use 12, but I don't recommend that. As you move away from daily data you get a smoothing effect that makes the results look better than they are. This is probably why many advisors publish monthly data. It looks better.

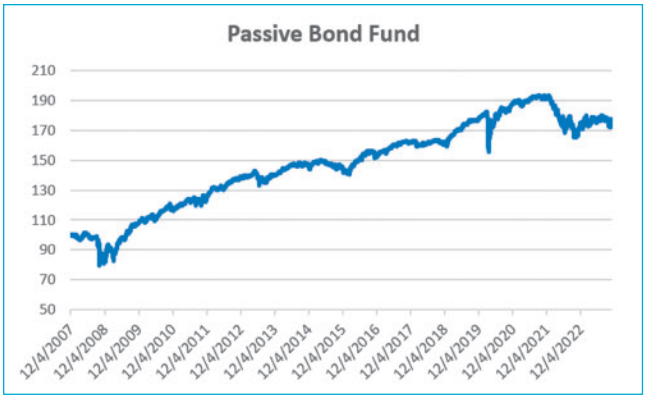
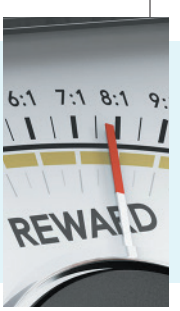


FIGURE 2: RETURNS FOR BOND FUND. This plots the NAVs from column K in Figure 1 to show the passive returns for the bond fund example, with **25% of capital assigned to each ETF in the fund**.

Like any other measure, it is only good if you go back far enough to include both bull and bear markets, plus a few price shocks. In Figure 3 we see the drawdowns of the bond fund. It was very quiet during the bull market from 2009 to 2018. Had we used those values, we would have leveraged our account for a maximum drawdown of 7%. That wouldn't have worked well.

By calculating the STDEV of all the returns from 2007, we get 0.0670, or 6.70%. The average of those drawdowns is 0.00015, very small daily gains of 1.5 basis points. Now we calculate the likelihood of a loss. Remember that 1 STDEV groups the middle part of the data at 67%, but we are only interested in the losses,

You can use the information ratio (IR) to compare with other portfolios to see that you are getting the best returns for the lowest risk.



which would then be 16%. Two STDEV, which groups 95% of the data, means that losses would be 2.5% of the data. Of course, this is using all the data from 2007.

Two STDEV seems like a good alternative, so the value would be +0.00015 – 2 * 0.670 or –13.4%. But according to Figure 3, the drawdowns exceeded that amount, more recently only by a few points, at 15%.

Two Choices for Controlling Drawdowns

Now we have two choices for keeping drawdowns below 13%. The first is to trade 10% less than the investment and put that 10% into fixed interest rates. That would reduce our exposure by 10% and add interest to the returns at the same time.

The other is to start deleveraging a small amount if the account loses 7%. Using the drawdown chart, we see that, once 7% is posted, the losses jump to 15% and 21%. Of course, we can't expect that to happen every time, but we could reduce our exposure by 20% at that point. Then the total losses would then be reduced by 20% between 7% and the final drawdown.

Both approaches would achieve the same goals, limiting the losses to the fund's maximum loss. It might be best to use both.

Resetting Initial Exposure

One of the problems with deleveraging when losses become large is resetting the position. I've tried to automate that without success.

The idea is to watch the returns of the deleveraged portfolio until it gains at least 5%, then wait for a sell-off and add some percentage of the leverage back, say 25%. The problem occurs when you don't wait long enough and you add and have another round of losses once you are fully invested. You are then jumping in and out, a bad idea. Yes, your fund will underperform the others while you are waiting to reset. On the other hand, you didn't get wiped out.

An Active Trader Can Do the Same Thing

I believe that many advisors do the same thing for their actively managed portfolios. It is not to anyone's benefit to have full exposure as you are nearing your maximum loss threshold. Simply keep track of your daily portfolio returns.

Using the same standard deviations calculated in the spreadsheet shown in Figure 1, you can find the point at which you would want to deleverage. It won't be as clear as with the bond fund, but it will tell you when to start deleveraging. If you have a 20% maximum loss, then deleveraging at 12% might be a good starting point.

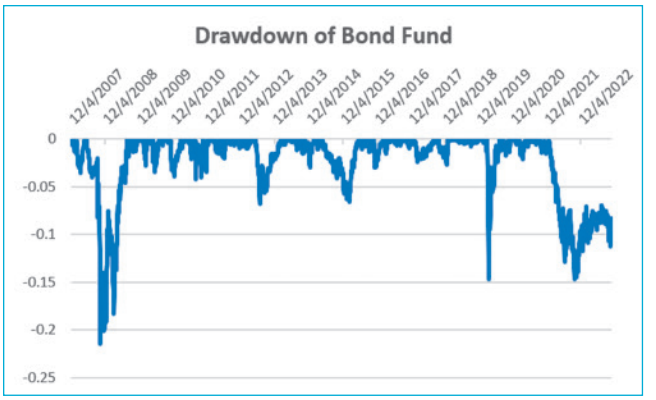


FIGURE 3: DRAWDOWN. We can set a risk level using probabilities. We can calculate the STDEV of all returns over a period and calculate the likelihood of a loss. In this graph, maximum risk was set at a loss of the average minus two standard deviations, giving a probability of occurrence of 2.5%. But the drawdowns exceeded that amount, especially in recent years.

Rather than one deleveraging point, you can have two or three, each with a 20% cut in exposure.

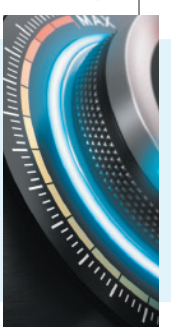
Setting Risk by Probability Plus Common Sense

In this case we set our maximum risk at a loss of the average minus two standard deviations, a probability of occurrence of 2.5%. But even at 2.5% there is always a chance we will see that happen. We need an alternative if the fund is going to stay in business.

One possibility is to use less leverage, putting the unused part in no-risk returns. That does help, but there are still situations where even that is not enough. So deleveraging at some point makes sense, both for the fund and the customers. It is important to know your options in advance.

Perry J. Kaufman is a trader and financial engineer. He is the author of many books on trading and market analysis, including the sixth edition (2020) of Trading Systems and Methods, Kaufman Constructs Trading Systems *(2020), and* Learn To Trade *(2022). For questions or comments, please go to www.kaufmansignals.com.*

Let's say that a systematic fund will not allow more than a 20% loss, at which point it will liquidate. How do you decide how much to trade?



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Playing Decreasing Volatility

The Power Of Volatility Contraction Patterns In Breakout Trading Strategies

You can filter trades to improve signal quality. Here, we focus on situations where volatility has decreased in the market to be traded. Here's how to code, test, and implement this concept.

by Andrea Unger

At Unger Academy, we use price patterns in our trading systems primarily as filters within the core strategy rather than as direct signals to open and close trades. Instead of managing trades based on market price patterns, as is commonly done, we use price action primarily as an operational filter.

In this article, we'll leverage a volatility contraction pattern to enhance a trend-following strategy that opens new positions when a certain price level is broken through. Our approach is to filter trades and focus exclusively on situations where volatility has decreased in the market. In the following sections, we'll discuss the reasons for this and try to understand the possible impact of this filtering approach on different instruments.

WHAT IS THE DEFINITION OF A VOLATILITY CONTRACTION?

If we use a daily bar to represent the prices that the market has reached in this session, we can obtain a figure like that shown in Figure 1.

The "body" represents the difference between the opening and closing prices of a market, while

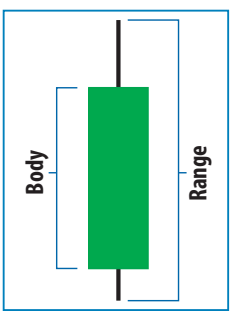

FIGURE 1: DAILY BAR. Comparing the ranges of successive bars can help identify potential trends in volatility.

POPTIKA/SHUTTERSTOCK

the "range" measures the distance between the high and the low of the session. Since the width of the range can serve as a gauge of price volatility, comparing the ranges of successive bars, one can identify potential trends in volatility.

The volatility contraction pattern we will evaluate can be defined in PowerLanguage as follows:

```
(highS(1)-lowS(1))< (highS(2)-lowS(2)) and (highS(2)-
lowS(2)) < (highS(3)-lowS(3))
```

Following this pattern, the range of the last completed session (highS(1)-lowS(1)) must be less than that of the previous one (highS(2)-lowS(2)), which in turn must be less than the previous one (highS(3)-lowS(3)).

How strong is its filtering action?

To answer this question, we can use a simple code that calculates the percentage of occurrences in the markets from different sectors, from 2010 to today:

```
var: countVolC(0), countsession(0),
dateInDateTimeFormat(0), datereadable("");

dateInDateTimeFormat = ELDateToDateTime(date);
datereadable = FormatDate("dd-MM-yyyy", dateInDate-
TimeFormat);

if (highS(1)-lowS(1))< (highS(2)-lowS(2)) and (highS(2)-
lowS(2)) < (highS(3)-lowS(3)) then begin
        countVolC = countVolC+1;
end;

countsession=countsession+1;
print(File("C:\test.txt"),datereadable,"    ",countVolC,"
",countsession);
```

Essentially, we count all the times the market has displayed three consecutive bars of decreasing ranges and compare them to the total number of sessions. We then calculate the frequency of these events (as a percentage) for the different markets. (See Figure 2.)

From the results of the table, we can see that the frequency of this pattern remains relatively consistent in the different markets, accounting for about 15–20% of the trading sessions. So, if we consider using this pattern as a filter in a breakout strategy, we can expect a significant decrease in the total number of trades. It is essential to beware of the potential risk that the results lose statistical relevance.

Nonetheless, we're optimistic about the efficacy of this filter, as a volatility contraction typically precedes notable price moves, especially breakouts at the levels monitored by the strategy.

	countSession	countVolC	% occur
@ES	3409	520	15%
@NQ	3409	576	17%
@EC	3410	616	18%
@CL	3407	632	19%
@RB	3407	588	17%
@GC	3406	598	18%

FIGURE 2: PATTERN FREQUENCY. How often does the volatility contraction pattern occur in the markets tested? The frequency of the pattern appears relatively consistent across the six markets tested (15–20% of the trading sessions). This frequency suggests the pattern could be useful as a filter and would decrease the total number of trades taken.

A first test with multiple instruments

For an initial test, we will look at the same set of futures contracts. We will apply the simple strategy described below to each instrument, using data from 2010 to the present and a 15-minute chart timeframe.

The strategy opens long or short positions on the breakout of the previous session's high or low. No additional filters are applied. The strategy closes the position at the end of the trading session or when a stop-loss of $2,000 is reached.

```
input: stoploss(2000);
var:  MP(0), oktrade(false), slb(false);

slb=sessionlastbar;
MP=marketposition;

if slb[1] then begin
        oktrade = true;
end;

if oktrade then begin
        buy next bar HighS(1) stop;
        sellshort next bar LowS(1) stop;
end;

if MP<>MP[1] and MP<>0 then oktrade=false;
setexitonclose;
if stoploss>0 then setstoploss(stoploss);
```

The results for the system are shown in Figure 3.

As expected, it is noticeable that the two instruments

	Avg trade	Num trade	Net profit	Max DD
@ES	$ -10,16	3137	$ -31.887	$ 78.075
@NQ	$ 1,57	3150	$ 4.930	$ 67.190
@EC	$ -7,67	3090	$ -23.700	$ 51.187
@CL	$ 21,49	3087	$ 66.350	$ 42.820
@RB	$ 41,69	3140	$ 130.897	$ 35.813
@GC	$ 13,84	2968	$ 41.090	$ 71.280

FIGURE 3: A TEST WITH MULTIPLE INSTRUMENTS. The same simple strategy is applied to each instrument, using data from 2010 to the present and a 15-minute chart timeframe.

	Avg trade	Num trade	Net profit	Max DD	
@CL	$ 21,49	3087	$ 66.350	$ 42.820	
@CL	$ 76,57	636	$ 48.700	$ 26.750	filtered
@RB	$ 41,69	3140	$ 130.897	$ 35.813	
@RB	$ 81,99	584	$ 47.884	$ 26.380	filtered

FIGURE 4: WITH FILTER VS. WITHOUT FILTER. Here you can compare the results from the system with and without the filter. Although the net profit decreased, the average trade is more sustainable for live trading.

from the energy sector, crude oil (@CL) and RBOB gasoline (@RB), perform best when traded with this breakout approach. We focus on these instruments and introduce the volatility contraction filter by modifying the script with the parts highlighted below:

```
var: MP(0), oktrade(false), slb(false), VolC(false);

if slb[1] then begin
        VolC = (highS(1)-lowS(1))< (highS(2)-lowS(2)) and
(highS(2)-lowS(2)) < (highS(3)-lowS(3));
        oktrade = true;
end;

if oktrade and VolC then begin
        buy next bar HighS(1) stop;
        sellshort next bar LowS(1) stop;
end;
```

The results with and without the filter are reported in the table in Figure 4.

We'll leverage a volatility contraction pattern to enhance a trend-following strategy that opens new positions when a certain price level is broken through.

	Avg trade	Num trade	Net profit	Max DD
@RB	$ 139,90	434	$ 60.706	$ 16.760

FIGURE 5: ADDING A TIME-BASED CONDITION TO ENTRIES. When Sunday and Monday are excluded from trading, there is an improvement to the overall metrics profile for the strategy, though not every individual metric is an improvement.

The filtering action of the pattern is precisely what we expected. Even though the net profit has decreased, the average trade is now closer to what might be called sustainable in live trading, where commission costs and slippage must also be considered.

For further illustration, we continue developing a specific strategy for the @RB futures contract.

LET'S CREATE A SIMPLE STRATEGY

We return to the code used in the previous section and see if adding a time-based filter to the entries can improve its performance.

We will then add two inputs, myday1 and myday2, to exclude trading during two sessions in the week. The @RB trading session starts at 6:00 PM (exchange time) and ends at 5:00 pm the following day, from Sunday to Friday. Based on the available historical data, it was found that the strategy's performance can be improved if myday1 = 0 and myday2 = 1, that is, if Sunday and Monday are excluded.

We will incorporate this new time-based condition into our code, highlighting the parts below:

```
Input: myday1(0), myday2(1);

if oktrade and VolC and (dayofweek(d)<>myday1 and
dayofweek(d)<>myday2) then begin
        buy next bar HighS(1) stop;
        sellshort next bar LowS(1) stop;
end;
```

This gives us the new results shown in Figure 5.

We find that the system's net profit has increased significantly, even though we only trade on four of the five available days per week. The maximum drawdown has decreased, and the average trade has increased to $140. The total number of trades has decreased, which may reduce the statistical significance of the results. However, we also trade fewer sessions, so 30–35 trades per year is a reasonable number. Therefore, we decide to keep the chosen time filter.

	Avg trade	Num trade	Net profit	Max DD
@RB	$ 206,00	415	$ 85.512	$ 29.623

FIGURE 6: CAN OVERNIGHT TRADING IMPROVE RESULTS? So far, trading has been intraday with all open positions closed at the end of the session. If trades are given more time to develop, will that improve the strategy? Results show that changing the strategy from intraday to multiday had a significant impact on the system.

	Avg trade	Num trade	Net profit	Max DD
@RB	$ 237,54	421	$ 100.006	$ 30.567

FIGURE 7: INTRODUCING A TAKE-PROFIT. Is adding a take-profit beneficial? Here you see the results from the system after introducing a take-profit of $4,000. Improvements are seen in the net profit and the average trade.

	Avg trade	Num trade	Net profit	Max DD
@ES	$ 93,92	530	$ 49.775	$ 15.112
@NQ	$ 62,15	579	$ 35.985	$ 38.675
@EC	$ 39,04	596	$ 23.268	$ 23.312

FIGURE 8: RESULTS WITH VOLATILITY CONTRACTION FILTER. In tests on energy futures, filtering trades by allowing trades only after a volatility contraction improved the system overall.

CAN WE FURTHER IMPROVE THE STRATEGY BY TRADING OVERNIGHT?

We are trading intraday and closing all open positions at the end of the session at the latest. What would happen if we gave the trades more time to develop? To answer this question, we introduce a new input, MaxDays, a new variable, DaysInTrade (which increases by 1 with each session) and replace the exit command setexitonclose with the last five lines in the following code set:

```
input: MaxDays(0);
var: DaysInTrade(0);

if slb[1] then begin
        VolC = (highS(1)-lowS(1))< (highS(2)-lowS(2)) and
(highS(2)-lowS(2)) < (highS(3)-lowS(3));
        oktrade = true;
        DaysInTrade=DaysInTrade+1;
end;

if MP<>MP[1] and MP<>0 then DaysInTrade=0;
if MP<>0 and DaysInTrade>=MaxDays and MaxDays>0
then begin
if Time>=1630 and Time<1700 then sell next bar market;
    end;
```

By optimizing MaxDays using data available from 2010 to the present, it proves beneficial to run trades up to a maximum of three sessions. We then set MaxDays=3 and observe the new results (see Figure 6).

Changing the strategy from intraday to multiday has had a significant impact on the system. The Max DD (maximum drawdown) has indeed decreased, but the net profit has increased by over 40%, and the average trade has increased by almost 50%, which is already a good level for the instrument we trade.

Can we increase it even more? The strategy is straightforward and already provides us with excellent metrics. Adding specific conditions could improve it, but also increase the risk of overfitting.

Therefore we decide not to introduce more entry rules but only to see if adding a take profit could be beneficial.

In Figure 7 you can see the results after introducing a take-profit of $4,000.

The Max DD (maximum drawdown) has remained more or less the same, but we have increased both the net profit and the average trade. Therefore, we are satisfied with this choice.

FINAL CONSIDERATIONS

We have shown how, for the primary energy futures, allowing trades only after a volatility contraction has had a significant impact on the metrics of a trend-following breakout system. This approach significantly improved the average trade and reduced the max drawdown.

This led us to develop a comprehensive strategy for @RB futures. In the future, it may be worthwhile to revisit the assets that we initially set aside due to their poor performance with the original strategy to determine the impact of this pattern on them.

When you compare these filtered results (Figure 8) with those of the unfiltered strategy, you notice a significant improvement in the metrics stands out. This underscores the efficacy of using a volatility contraction filter on breakout entries.

Andrea Unger is a full-time professional trader, president of The Unger Academy, and author of The Unger Method.

Continued on page 51

Allowing trades only after a volatility contraction has had a significant impact on the metrics of a trend-following breakout system.


Emilio Tomasini

THE WORLD OF RETAIL TRADING

Emilio Tomasini is an adjunct professor of corporate finance at the University of Bologna in Italy and is a professional trader. He has audited over 5,000 accounts of traders during 13 years of a real-money trading competition, giving him unique insights into what helps a retail trader to succeed. He has expertise in technical analysis and trading system design. In this column, he shares his sometimes "unserious" thoughts on serious topics in finance. In his writings, he hopes to help the retail trader better understand the leap from unprofitable to profitable trader, firmly believing that the right answers can come only if the right questions are asked. At his website at www.emiliotomasini.com, he offers some of his expertise in a free video course.

INTRADAY FUTURES PRICES

The quality of intraday price data is an obscure topic. But is it a reason why some trades fail in systematic trading?

In the universe of trading, the allure of easy money is what most captivates the public. Often, easy money is equated with quick money. While scalping remains shrouded in mystery for most (what is it? how does it work? do you scalp on the book or on charts?), the realm of trading intraday is replete with tall tales. Intraday trading on futures stands out as the most appealing activity in this universe of quick and easy money, and it is often perceived as the sexiest activity.

I have been involved in intraday trading on futures for over 30 years, back when the internet was still in its infancy and real-time futures prices were only available via satellite. If it snowed, you had to climb onto the roof with a broom to clear the satellite dish, otherwise, the price feed would trickle in, and trading systems wouldn't work. This isn't a joke; it's reality, well-remembered by those of us with gray hair.

Unfortunately, the advent of the internet and the phase where market prices are a free for all hasn't improved the situation. While you no longer have to climb onto your roof with a broom in your hands, you still need extraordinary diligence in evaluating the results of trading systems that run on intraday prices. I regularly receive from my readers beautiful equity lines of intraday futures trading systems. I browse various intraday trading system developers' websites and admire these generous equity lines that soar straight to the heavens, almost like spears thrown by fearless warriors. This illustrates that easy and fast money is as addictive as amphetamines, and no one in the financial markets, including me, is immune.

Intraday trading on futures allows you to pair respectable performance with financial leverage, often resulting in explosive outcomes, at least on paper. Considering that you can buy an S&P mini intraday with about $800 margin, you can see how accessible financial leverage is akin to whiskey in a baby's bottle. But there's a sad truth about intraday futures trading systems. If you want to know this sad truth, then read on. This is a disclaimer I include in my articles whenever I'm about to write things that neither the industry nor the general public likes.

You still need extraordinary diligence in evaluating the results of trading systems that run on intraday prices.

If you have dreams of getting rich quickly and easily with intraday futures trading, then I don't want to ruin those dreams: a life without dreams is like soup without salt. But if you want to know the truth, well, among the thousands of traders I've audited in my Top Trader real-money trading championship, none who have achieved positive performance on futures with intraday trading in the years 2000–2011 continue to do so today. Conversely, those who specialize in trading *stocks or options* intraday continue to grind grain with their mill decade after decade. Intraday trading on futures is like writing on water, and it's rare to find traders who manage to build a lifelong career on it.

Intraday trading on futures is challenging due to several factors, but here, I'll focus on just one: the quality of intraday data. Not long ago, my associate Marco Cavallari and I conducted a test analyzing S&P 500 emini futures intraday prices from three sources, which I'll nickname CyberJoe, TradeJoe, GospelJoe for legal reasons. I'm a client of all three brokers and appreciate many other aspects of their service. However, expecting to find the perfect broker is an illusion: perfection belongs to the heavens, not the Earth or brokers.

CyberJoe is one of the world's leading brokerages; TradeJoe is a major

Continued on page 41

Notice of Class Action Settlement

If you transacted in Euroyen-Based Derivatives[1] from January 1, 2006 through June 30, 2011, inclusive, then your rights will be affected and you may be entitled to a benefit. This Notice is only a summary of the Settlement and is subject to the terms of the Settlement Agreement[2] and other relevant documents (available as set forth below).

The purpose of this Notice is to inform you of your rights in connection with a proposed settlement with Defendant Société Générale ("SocGen") in the action titled *Fund Liquidation Holdings LLC, et al. v. UBS AG, et al.*, Case No. 15-cv-5844 (GBD) (S.D.N.Y.) (the "Action"). The settlement with SocGen (the "Settlement") is not a settlement with any other Defendant and thus is not dispositive of any of Representative Plaintiffs' claims against the remaining Defendants.

The Settlement has been proposed to resolve this class action lawsuit with SocGen concerning the alleged manipulation of the London Interbank Offered Rate for Japanese Yen ("Yen-LIBOR") and the Euroyen Tokyo Interbank Offered Rate ("Euroyen TIBOR") from January 1, 2006 through June 30, 2011, inclusive. The Settlement will provide an additional **$35,000,000** to pay claims from persons who transacted in Euroyen-Based Derivatives from January 1, 2006 through June 30, 2011, inclusive. If you qualify, you may send in a Proof of Claim and Release form to potentially receive benefits. Or you can exclude yourself from the Settlement, or object to any part of it.

If you timely submitted a Proof of Claim and Release pursuant to any of the Prior Class Notices in this matter (defined below), **then you do not have to submit a new Proof of Claim and Release to participate in this Settlement with SocGen**. The Prior Class Notices are: (i) the June 22, 2016 Notice ("2016 Notice") related to $58 million in settlements with Defendants R.P. Martin Holdings Limited, Martin Brokers (UK) Ltd., Citigroup Inc., Citibank, N.A., Citibank Japan Ltd., Citigroup Global Markets Japan Inc., HSBC Holdings plc, and HSBC Bank plc; (ii) the August 3, 2017 Notice, amended September 14, 2017 (the "2017 Notice") related to $148 million in settlements with Defendants Deutsche Bank AG, DB Group Services (UK) Ltd., JPMorgan Chase & Co., JPMorgan Chase Bank, National Association, and J.P. Morgan Securities plc; (iii) the March 8, 2018 Notice ("2018 Notice") related to the $30 million settlement with The Bank of Tokyo-Mitsubishi UFJ, Ltd. and Mitsubishi UFJ Trust and Banking Corporation; (iv) the September 11, 2019 Notice (the "2019 Notice") related to $71 million in settlements with Mizuho Bank, Ltd., Mizuho Corporate Bank, Ltd., Mizuho Trust & Banking Co., Ltd., The Norinchukin Bank, Sumitomo Mitsui Banking Corporation, The Bank of Yokohama, Ltd., Shinkin Central Bank, The Shoko Chukin Bank, Ltd., Sumitomo Mitsui Trust Bank, Ltd., and Resona Bank, Ltd.; or (v) the October 5, 2022 Notice (the "2022 Notice") related to $22.5 million in settlements with Barclays Bank PLC, Barclays Capital Inc., Barclays PLC, Nex International Limited (f/k/a ICAP plc), ICAP Europe Limited, TP ICAP plc (f/k/a Tullett Prebon plc and n/k/a TP ICAP Finance plc).

The United States District Court for the Southern District of New York (500 Pearl St., New York, NY 10007-1312) authorized this Notice. Before any money is paid, the Court will hold a Fairness Hearing to decide whether to approve the Settlement.

Who Is Included?

You are a member of the "Settlement Class" if you purchased, sold, held, traded, or otherwise had any interest in Euroyen-Based Derivatives at any time from January 1, 2006 through June 30, 2011, inclusive. Excluded from the Settlement Class are (i) the Defendants and any parent, subsidiary, affiliate or agent of any Defendant or any co-conspirator whether or not named as a Defendant; and (ii) the United States Government.

Contact your brokerage firm to see if you purchased, sold, held, traded, or otherwise had any interest in Euroyen-Based Derivatives. If you are not sure you are included, you can get more information, including the Settlement Agreement, Mailed Notice, Plan of Allocation, Proof of Claim and Release, and other important documents, at www.EuroyenSettlement.com ("Settlement Website") or by calling toll free 1-866-217-4453.

What Is This Litigation About?

Representative Plaintiffs allege that each Defendant, from January 1, 2006 through June 30, 2011, inclusive, manipulated or aided and abetted the manipulation of Yen-LIBOR, Euroyen TIBOR, and the prices of Euroyen-Based Derivatives. Defendants allegedly did so by using several means of manipulation. For example, panel banks that made the daily Yen-LIBOR and/or Euroyen TIBOR submissions to the British Bankers' Association and Japanese Bankers Association respectively (collectively, "Contributor Bank Defendants"), such as SocGen, allegedly falsely reported their cost of borrowing in order to financially benefit their Euroyen-Based Derivatives positions. Contributor Bank Defendants also allegedly requested that other Contributor Bank Defendants make false Yen-LIBOR and Euroyen TIBOR submissions on their behalf to benefit their Euroyen-Based Derivatives positions.

Representative Plaintiffs further allege that inter-dealer brokers, intermediaries between buyers and sellers in the money markets and derivatives markets (the "Broker Defendants"), had knowledge of, and provided substantial assistance to, the Contributor Bank Defendants' foregoing alleged manipulations of Euroyen-Based Derivatives. For example, Contributor Bank Defendants allegedly used the Broker Defendants to manipulate Yen-LIBOR, Euroyen TIBOR, and the prices of Euroyen-Based Derivatives by disseminating false "Suggested LIBORs", publishing false market rates on broker screens, and publishing false bids and offers into the market.

Representative Plaintiffs have asserted legal claims under various theories, including federal antitrust law, the Racketeering Influenced and Corrupt Organizations Act, and common law.

SocGen has consistently and vigorously denied Representative Plaintiffs' allegations. SocGen entered into the Settlement Agreement with Representative Plaintiffs, despite believing that it is not liable for the claims asserted against it, and without admitting liability, to avoid the further expense, inconvenience, and distraction of burdensome and protracted litigation, thereby putting this controversy to rest and avoiding the risks inherent in complex litigation.

What Does the Settlement Provide?

Under the Settlement, SocGen agreed to pay **$35,000,000** into the Settlement Fund. If the Court approves the Settlement, potential members of the Settlement Class who qualify and have sent or will send valid Proof of Claim and Release forms may receive a share of the Settlement Fund after they are reduced by the payment of certain expenses. The Settlement Agreement, available at the Settlement Website, describes the details about the proposed Settlement. The exact amount each qualifying Settling Class Member will receive from the Settlement Fund cannot be calculated until (1) the Court approves the Settlement; (2) certain amounts identified in the full Settlement Agreement are deducted from the Settlement Fund; and (3) the number of participating Class Members and the amount of their claims are determined. In addition, each Settling Class Member's share of the Settlement Fund will vary depending on the information the Settling Class Member provides on the Proof of Claim and Release form.

The number of claimants who send in claims varies widely from case to case. If less than 100% of the Settlement Class sends in a Proof of Claim and Release form, you could get more money.

Under the Settlement, members of the Settlement Class will release SocGen from all claims relating to conduct alleged or which could have been alleged in the Action or which could have been alleged concerning any Euroyen-Based Derivatives. The full terms of the release can be found in the Mailed Notice or the Settlement Agreement available at www.EuroyenSettlement.com or by calling 1-866-217-4453.

How Do You Ask For a Payment?

If you are a member of the Settlement Class, you may seek to participate in the Settlement by submitting a Proof of Claim and Release to the Settlement Administrator at the address provided on the Settlement Website postmarked no later than August 2, 2024. You may obtain a Proof of Claim and Release on the Settlement Website or by calling the toll-free number referenced above. If you are a member of the Settlement Class but do not timely file a Proof of Claim and Release, you will still be bound by the release set forth in the Settlement Agreement if the Court enters an order approving the Settlement Agreement.

Any member of the Settlement Class that previously submitted a Proof of Claim and Release in connection with the 2016 Notice, 2017 Notice, 2018 Notice, 2019 Notice, or 2022 Notice **does not have to submit a new Proof of Claim and Release to participate in this Settlement with SocGen** and will be subject to and bound by the release set forth in the Settlement Agreement with SocGen, unless such member submits a timely and valid request for exclusion, explained below.

What Are Your Other Options?

All requests to be excluded from the Settlement must be made in accordance with the instructions set forth in the Settlement Notice and must be postmarked to the Settlement Administrator no later than May 20, 2024. The Settlement Notice, available at the Settlement Website, explains how to exclude yourself or object. All requests for exclusion must comply with the requirements set forth in the Settlement Notice to be honored. If you exclude yourself from the Settlement Class, you will not be bound by the Settlement Agreement and can independently pursue claims at your own expense. However, if you exclude yourself, you will not be eligible to share in the Net Settlement Fund or otherwise participate in the Settlement.

The Court will hold a Fairness Hearing in these cases on June 18, 2024, to consider whether to approve the Settlement and a request by the lawyers representing all members of the Settlement Class (Lowey Dannenberg, P.C.) for an award of attorneys' fees of no more than twenty percent (20%), or $7,000,000, of the Settlement Fund for investigating the facts, litigating the case, and negotiating the settlement and an award to replenish the litigation fund created to reimburse their costs and expenses in the amount of no more than $500,000. The lawyers for the Settlement Class may also seek additional reimbursement of fees, costs, and expenses in connection with services provided after the Fairness Hearing. Representative Plaintiffs may also seek an award from the Settlement Fund as reimbursement of their own expenses and compensation for their time devoted to this litigation, not to exceed $350,000. These payments will also be deducted from the Settlement Fund before any distributions are made to the Settlement Class.

You may ask to appear at the Fairness Hearing, but you do not have to. For more information, call toll-free 1-866-217-4453 or visit the website www.EuroyenSettlement.com.

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[1] "Euroyen-Based Derivatives" means (i) a Euroyen TIBOR futures contract on the Chicago Mercantile Exchange ("CME"); (ii) a Euroyen TIBOR futures contract on the Tokyo Financial Exchange, Inc. ("TFX"), Singapore Exchange ("SGX"), or London International Financial Futures and Options Exchange ("LIFFE") entered into by a U.S. Person, or by a Person from or through a location within the U.S.; (iii) a Japanese Yen currency futures contract on the CME; (iv) a Yen-LIBOR- and/or Euroyen TIBOR-based interest rate swap entered into by a U.S. Person, or by a Person from or through a location within the U.S.; (v) an option on a Yen-LIBOR and/or a Euroyen TIBOR-based interest rate swap ("swaption") entered into by a U.S. Person, or by a Person from or through a location within the U.S.; (vi) a Japanese Yen currency forward agreement entered into by a U.S. Person, or by a Person from or through a location within the U.S.; and/or (vii) a Yen-LIBOR- and/or Euroyen TIBOR-based forward rate agreement entered into by a U.S. Person, or by a Person from or through a location within the U.S.

[2] The "Settlement Agreement" means the Stipulation and Agreement of Settlement with Société Générale entered into on February 16, 2024.

Technical Analyst, Trader, Educator, Author, And Entrepreneur

A Conversation With Prashant Shah

Prashant Shah is co-founder and CEO of Definedge Solutions, which develops financial products and research. Shah has over 25 years of stock market experience that includes trading as well as developing software, technical indicators, algorithms, and trading rules. He has helped to bring the arcane subject of technical analysis to many individuals and institutions through his educational efforts, especially in his home country of India.

Why interview someone more involved with trading the Indian stock market than the U.S. stock market here in our pages? Because his knowledge of technical analysis and charting runs deep. Shah earned the Chartered Market Technician (CMT) and Certified Financial Technician (CFTe) designations and also holds a Master Of Financial Technical Analysis (MFTA) designation for his original research on line break swing trading techniques. Shah is the author of four books on trading and market analysis.

Definedge Solutions offers a 35-hour video course taught by Shah on aspects of technical analysis and trading and using point & figure charts. Since 2017, Definedge Solutions has held an annual two-day conference on market analysis topics, with one again planned for later this year.

Definedge Solutions launched its Tradepoint desktop charting platform in 2015 with a web version in 2019. In 2021, the company launched Definedge Securities Brokering, a platform for traders and investors that combines technical analysis, fundamental analysis, options strategies, and order placement. Definedge Solutions also developed the OPSTRA software for options analysis, option strategy building, and backtesting. Definedge Solutions also offers a brokerage service, Definedge Securities. Definedge Solutions and Definedge Securities are based in Pune, Maharashtra, India (https://www.definedgesecurities.com).

STOCKS & COMMODITIES contributing writer and ETF columnist Leslie N. Masonson interviewed Prashant Shah via email in mid-February 2024 to discuss his approach to trading and market analysis, his indicators, his company's offerings, and how he acquired his deep knowledge.

There is a tendency for people to follow what most others are doing. I realized that the edge lies in being different.

What is your educational background?

I graduated college with a degree in commerce.

What were your career aspirations after graduating?

My goal was to pursue a career in the creative field. Despite being an average student, I was very creative from the beginning.

While I was studying, I was already working. I realized that I did not have a 9-to-5 employee mindset. I was very confident and eager to learn and work hard. However, I was receiving clerical work opportunities, and it was becoming increasingly frustrating for me. My ambitions were high, but I was clueless. Since I was good at accounting, I pursued chartered accountancy.

I understand that you were initially interested in filmmaking but couldn't afford the course tuition, so you pivoted to a job in the business accounts department of a cement company to earn a living. Did you enjoy learning about accounting?

Not really. Even though I was good at the subject, I realized that it was not for me. However, I wanted to complete my studies and acquire the CA (Chartered Accountant) designation. There was a requirement to complete a three-year internship before appearing for the final level of the examination. I left the job to practice accounting. Since

TOA55/SHUTTERSTOCK

I was in debt following the wedding of my sister, I was unable to afford the internship.

You then took a job at a financial firm, where you excelled and landed multiple promotions. At the firm, you worked with investors, traders, and businesses and you were able to build a rapport with them. There, you learned a lot about trading and investing. Was that your introduction to charts and technical analysis?

Yes. A friend recommended me for the job. It was a stock market company. The company was hiring sales executives who would bring in new accounts. I immediately took it up. This was in January 2005. I had some theoretical knowledge of stock shares but no real idea how it worked. I worked very hard from day one in the job and performed very well.

Along the way, I would see how clients would mostly rely on the news in order to make trading and investment decisions. I started developing some sources for news so I could share them with my clients, and I would study company reports. At one point in time, I visited the office of a trader to facilitate opening an account for him. I noticed he was studying some graphs on his computer screen. I was intrigued by the way he described the levels at which he intended to enter and exit the market. That was my introduction to charts and technical analysis.

Were you skeptical at first, or did you immediately see the value of the charts?

I wasn't sure at that point but I did find it intriguing.

I needed new ideas every day to discuss with my clients, and they were interested in levels at which they could enter or exit. At our company, we would receive daily research reports with stock suggestions, and we could use the information to discuss with our clients. Our clients were doing well.

However, I thought I shouldn't be too dependent on those reports. I thought I should learn for myself how stocks are identified for the reports. Biren Patel was the head of research and was the person writing the reports. Somehow I found his number and called him up. I told him that I would like to learn how he derives his stock recommendations. He was kind enough to meet with me. He explained about the open, high, low, and close and some patterns related to OHLC. It was a new and interesting concept to me. I decided to study the subject in greater detail.

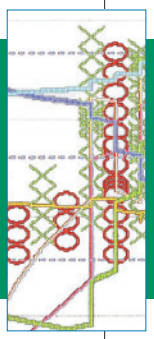
After that, you became a voracious reader of investment-related books and you spent many hours in front of stock market terminals using charting software. What value did this reading and research provide to you?

Tremendous value. In order to gain a comprehensive understanding of the subject, I read as much as possible. I read biographies, history, and philosophy. If you really want to learn something, you must go deep into it. In those days, the amount of information available on the internet was limited, and books were hard to find. I really enjoyed learning about the subject and I started practicing it. That year, 2006, was a wonderful year for me and my clients.

And yet you lost heavily in the 2007 stock market crash. Why?

It was a very strong bull market in 2005–2007 in the Indian stock market. You could simply find a stock with reasonably positive metrics and it would work out. I was studying about position sizing and risk management, but I realized you can bend those rules if your research located strong stocks. You can be flexible with stop-losses. In mid-2007, there was a short-term crash due to news regarding promissory notes here in the Indian markets. I watched the market tumble and hit the lower circuit in a matter of minutes after the finance minister made a statement during market hours. I was holding long positions and I had no idea what to do. The market remained under pressure for some time and eventually bounced back. That dip may not even be visible on the charts today but I lost heavily in that. I realized that my performance up till that point was the result of the bull market.

Trading is not only about identifying stocks. Risk management and execution are extremely important aspects.

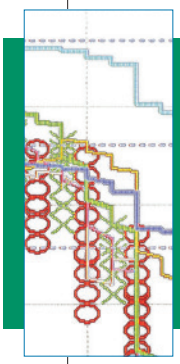


Eventually, breaking rules will have adverse consequences; I realized that there are some bad habits you acquire during a bull market.

What did that experience teach you about the importance of risk management and discipline?

That experience taught me that trading is not only about identifying stocks. Risk management and execution are extremely important aspects. What separates a good trader from a good analyst is a discipline that leads to better execution. I learned that booking losses is critical to better returns in this business. I also learned that technical analysis is a powerful tool for risk management.

As I understand it, that was the first



Eventually, breaking rules will have adverse consequences. I realized that there are some bad habits you acquire during a bull market.

time you thought about the concept of shorting the market. Why had you not considered that aspect of trading earlier on?

Because I had only witnessed a bull market till then. I knew about shorting but that approach wasn't making money. Instead, you could buy stocks at a breakout, pullback, or reversal and you'd get better returns. You can call it "recency bias." I thought this was the way the market functioned. Later, I learned how no trend or market scenario is permanent. The markets and trends change and they don't give you prior notice.

With that newly gained knowledge, you successfully shorted the 2008 market correction. What were some takeaways from that experience?

That year changed my life. It taught me risk management and shorting. Before the market tanked in January 2008 during the Great Financial Crisis, I reversed my positions and shorted stocks. It was a very profitable year for me and my clients.

In retrospect, I didn't do anything outstanding in terms of technique. However, I noticed that everyone around me was having difficulty. Even the market experts and good technical analysts in my circle were in trouble.

And I learned an interesting thing. If someone is losing and you tell them how someone else lost more, he will find relief. The advantage lies in overcoming these common tendencies.

I realized that floating with the crowd would not be helpful. Everyone needs to develop their own approach. Don't just follow what everyone else does. Later, this guiding principle helped me explore subjects many people are not familiar with.

I learned that execution is the key to trading success. I also learned that you need to adapt to changing market conditions. I decided to leave no stone unturned to learn this subject in detail. I immersed myself in it.

At the time you said, "When there is difficulty, don't forget to learn lessons." Can you mention the lessons you learned that helped you to have a positive year in 2008?

2008 was a good year for me because of my 2007 experience. Analyzing and learning from mistakes helped me. I realized that strong direction bias is a major culprit. You should be rigid when it comes to execution of trading systems but have a flexible view of market direction. I learned that all types of analysis are good on paper. A significant edge in trading comes from solid execution. This helped me in 2008. Therefore, when there is difficulty, don't forget to learn lessons.

You studied charting and technical analysis in detail and pursued multiple designations that were not common in India at the time you secured them. What was your thought process in attaining those designations and their subsequent value to you and your professional reputation?

I wanted to learn about the subject as thoroughly as I could. I coded all indicators and patterns in Excel in order to better understand them. I coded all options strategies in Excel. My objective was to understand the logic behind different studies. Upon looking over the syllabus for the exams, I realized that I would have to read all the best authors in different areas of technical analysis. I was very excited about that and I pursued it with that objective, which was a wonderful decision. I used to work in the day and study till late but I thoroughly enjoyed it. Learning so many aspects of a subject gave me perspective. Wonderful memories of those days.

In 2009, you discovered the value of relative strength after reading Charles D. Kirkpatrick's co-authored book with Julie R. Dahlquist,* Technical Analysis: The Complete Resource for Financial Market Technicians. *Is relative strength an integral part of your stock selection process?

I realized I was already practicing it but did not know it was known as relative strength. I used to sit in front of trading terminals along with my charting software. What I used to call a screen reading was more of a relative strength.

I read Kirkpatrick and Dahlquist and learned about relative strength. Later, I read John Murphy, William O'Neil, Thomas Dorsey, Jeremy Du Plessis, Mark Minervini and many others from whom I learned different aspects of the subject. In fact, it has been an integral part of my stock selection process since the beginning, and I am a firm believer in its effectiveness.

Why did you eventually write a book about that subject in 2021?

I wrote my first book in 2017. It was on point & figure charting. Then I wrote about the renko charting method. I wrote a chapter on relative strength in both books. I have been a

practitioner of relative strength and breadth analysis along with price action. I always wanted to write about relative strength and breadth in detail but couldn't find the time to write. The lockdown during the pandemic provided me with an opportunity.

In 2009 you pursued the CFTe and in 2010 the CMT. You also read many books beyond the syllabus while studying for those exams. How did you find the time to study for the exams with a spouse and a full-time job?

I was amazed by the potential and possibilities in the stock market. I already had so many ideas while learning and practicing the subject. It occurred to me that I can contribute to this field. I had that strong passion and a willingness to learn as much as possible. There is a quote from Swami Vivekananda, "Take up one idea and make that your life. Every part of your body should live that idea." This was that idea for me. From these certifications, I have gained a great deal of knowledge and experience. I read all those authors multiple times and tried to understand their point of view. I really enjoyed the process.

My wife Isha is an IT professional and extremely supportive. She used to help me find books and complete formalities for certifications. I used to spend most of my time doing research and told her that it was a temporary situation, earlier for certifications, then for books and research, then for software development, and it has never ended. Although I tried my best to balance the time, credit goes to her for her understanding.

After that you continued to expand your knowledge. You would spend time manually drawing charts, including the three-line break chart for swing trading. What drove you to keep learning?

The majority of traders look for consensus. It is more comfortable for them if more people agree with their views and opinions. There is a tendency for people to follow what most others are doing. I realized that the edge lies in being different. Thus, whenever I encountered something new or something I was unfamiliar with, I always explored it further.

A friend told me about the three-line break charting method. I started looking for a book on the subject and came across *Beyond Candlesticks* by Steve Nison. I found various charting methods in that book. When I experimented with those methods, I realized they offered ways of trading the markets that could help overcome some practical issues. Charting can add objectivity to your trade decisions. Many people I talked to were unaware of these charting methods. That struck me. I checked out line-break, point & figure, renko, kagi, heikin-ashi, and range bars. I studied the minute details. It has been my pleasure to study them extensively.

So you were looking to discover what could give you an edge. I take it this is why you chose the name for your company, Definedge Solutions?

You need an edge to outperform. It was just that my approach is to go deep into the most overlooked areas of market analysis. We believe that focusing on depth, lesser-explored things, execution, and doing things differently can help define your edge.

You've said that trading taught you to focus on the process and detach from the outcome. How did that help you become a better trader?

When you make a profit in a trade, you are happy. If you lose in a trade or during a session, you become upset. This is normal. Does that particular trade or day determine your overall success as a trader? You must develop a broad and long-term perspective. Many traders are aware of this but they don't work on it.

We all have an analyst and a trader in us. Analysis and trading are two different professions. The needs and success criteria of both are different. Analysis needs a better hit rate, while trading needs better execution and a risk-reward proposition. When you are too focused on the P&L on your screen and attached to the outcome, you mostly end up doing emotional trading. Your plan was to execute a strategy but you end up doing something else.

That's why strategies can look good on paper but aren't always executed well by the trader. We all trade for the purpose of making money; there can be no doubt about that. But having a sole focus on money when we are trading is not helpful. Detachment from the outcome and focusing instead on the execution is a key aspect of successful trading. It takes experience to understand this and put it into practice.

After your first child was born you decided to leave your job and take a year off, during which time you continued to study and research the stock market. In 2014 you hired a programmer to help you develop software, which led to forming your company. What was the business objective of the company and who was your target audience?

We wanted to develop tools to help people make better trading and investing decisions. We wanted to educate people. Our target audience is anyone familiar with stock market basics.

What products and services does Definedge Solutions provide?

At Definedge, we have built products named TradePoint, Zone, Opstra,

Radar, MFZone, and Buzzar. These products are complete platforms for technical analysis, scanning, backtesting, fundamental analysis, options strategies, mutual fund analysis, and strategy alerts. We have online learning platforms like Shelf, Insight, and Gurukul. We offer charting methods and new, innovative strategies and tools, as well as education.

Can you briefly walk us through your "3P" process, which stands for performance, participation, and price?

People typically analyze the success of a particular market period based on the strategy they used. Most traders focus on price analysis. Really, any period's performance is determined by three factors: *me, method*, and *market trend*. As I explain in my book *You, Me, And Trading*, I refer to it as the "3M matrix."

You need to adapt a strategy to changing market conditions. Traders don't focus enough on this.

Performance is relative strength analysis. *Participation* is breadth analysis. These are the factors for my market regime analysis.

Price comes after that. How to tweak strategies depends on market regime analysis. I call it the "3P" process. *Performance analysis* for what to trade, *participation trend* to know when to trade, and *price analysis* to know how to trade.

What type of software have your created for ETFs? Is it for the US market or Indian market?

I am very active in ETFs. My software is mostly for the Indian markets. We are currently exploring options for launching it in the US and other international markets.

A research paper you wrote on swing trading techniques helped you secure the MFTA designation from IFTA. Did earning that designation have an impact on bringing new clients to your firm?

That research paper was my personal project. I wanted to explain my work and my thought process. It was an original work. I am pleased that IFTA awarded me the MFTA (Master of Financial Technical Analysis) designation. I am not sure about clients and business, but I have definitely learned and benefited a lot from IFTA and CMT certifications and papers.

Do you trade only in the Indian stock market or also in the U.S. stock market?

Only the Indian markets currently. One of our team members trades NYSE stocks. I plan to trade NYSE stocks and ETFs in the near future.

Can you explain your multistep process for selecting stocks for investing or trading?

My first step is an *asset class relative strength analysis* to determine whether equities are doing well. My second step is *segment analysis*—large-cap, small-cap, mid-cap, micro-cap, and other segments; I like to see which segment is outperforming. I have also defined some stock groups based on momentum, outperformance, volatility, etc. I analyze their performance. Then I see sector performance. Apart from the stock exchange-defined sectors, we have created many sectors in our platform. We make every effort to categorize every listed stock. This sector analysis helps in understanding sector rotation and outperformance. Until this point, I mostly use relative strength and breadth analysis.

The price analysis and strategy depend on this analysis. If an equity is outperforming, bullish strategies in outperforming sectors and segments are a decent idea. We can ride the trend as long as breadth is not indicating exhaustion.

My term "outperformance" or "strong" does not simply refer to the top sectors. I also look at sectors starting to show strength.

My core approach is using bullish strategies in outperforming sectors and asset classes. Likewise, I use bearish strategies for stocks showing exhaustion and underperformance. I decide when to ride the trend or when to book the trade dependent on my market breadth analysis.

Can you provide an example chart and explain how you plot your indicators to pinpoint buy and sell points?

We use multiple setups, so it is difficult to discuss them in a few charts. In any case, Figure 1 is one example.

This is when a trade meets multiple conditions. It's above the bearish trendline, it's above the indicator, and it triggered an anchor column follow-through setup.

Once qualified, a trend can be ridden based on the indicator. However, such examples look well on chart but can be difficult to follow at times in real time. There is a possibility of exits in between because of exhaustion signs or another reason. In such cases, reentry rules are more important. You should reenter if the trend and setup are strong. I have found trading continuation breakouts to be a very effective strategy.

Do you use predetermined stop-loss orders, placed immediately after the trade? Do you recommend that practice to your clients?

Absolutely. Retail traders have that advantage. If your position size is significant, you don't have that luxury. You have to monitor positions and you need staggered entry and exit mechanisms. In any case, I strongly

FIGURE 1: POINT & FIGURE CHART. On this example point & figure chart of Swan Energy, a cloud and key original entry and reentry levels are pinpointed that were above the bearish trendline.

believe that exit criteria should be clearly defined.

What is your favorite chart type, and why?

Point & figure and renko are my favorite charting types.

P&F divides price moves into fixed-sized boxes and plots the price in vertical mode. A single column represents multiple sessions. This is a unique way to look at price patterns.

A renko chart also divides price moves into fixed-sized boxes (bricks) but it plots price in diagonal mode. A single session can have multiple bricks. This is also a unique way to look at prices.

Both of these methods are completely objective and remove noise from the data. I call them noiseless charts. They suit my approach and I strongly believe these are hidden treasures not explored much by market participants.

They show some really interesting price patterns that are otherwise not easy to find. The objectivity helps us in scanning and selecting stocks.

I use P&F for price patterns for most of my analysis and stock selection. I use renko charts for some trading strategies on indexes and options.

Do you use different chart types for long- or short-term trading, or is it dependent on other factors? How do you select which type of chart to use?

I mostly use P&F for stocks, derivatives, and intraday. I use renko for indexes and some option strategies.

Do you chart stocks using multiple chart styles to see if the buy and sell points line up, giving you more confidence in the turning points?

Yes. I call it a multichart setup. Each charting method has its own unique characteristics and when you study them, you begin to see how they complement one another. I like to see the price patterns and setups in different charting methods to identify important reference points.

What technical indicators do you use most often?

My favorite is the breadth indicator. It complements price analysis.

I like the concepts behind the supertrend indicator, the adaptive moving average, and the parabolic SAR. Along the same line, I have created a proprietary indicator that is more dynamic. The indicator has a different formula for different charting methods. I kept in mind the most important properties of each charting method when I designed the formulas. I use that for trend filtering. But most of my work depends on price analysis.

Do you use Bollinger Bands or Keltner channels? If not, why not?

Not really. I am more of a price pattern trader. They are good, but you cannot utilize all of the available tools and indicators.

I filter on some important formations for entry and exit. A lot of observation and experience goes into my work. That is what I wish to focus on.

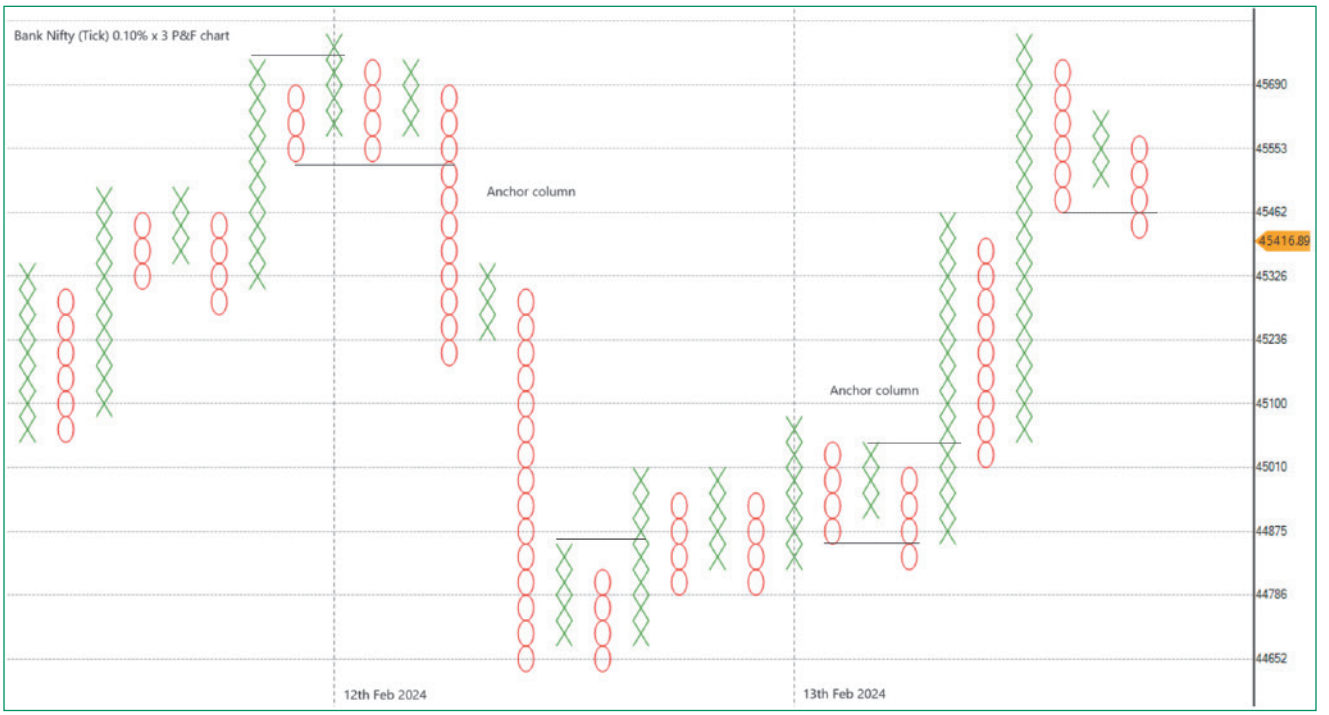


FIGURE 2: POINT & FIGURE CHART. This shows a point & figure tick chart (less than one-minute intervals) of the Bank Nifty sector index over a few trading days. The box size can be adjusted by the user.

What price patterns have you found useful in your work?

There are many. I do not trade only one or two patterns. I follow P&F price patterns and they show price formation on different occasions. For example, triangle breakouts show that the stock is moving out after a swing converging pattern, whereas a broadening pattern breakout shows the possibility of a decent trend after volatile swing moves. So these patterns are important.

However, if I had to choose only a few patterns, I would choose the anchor column follow-through, multi-column breakout, and multi-support price patterns.

What type of trading do you do in your personal account using your rules-based approach?

Trading futures and options intraday. I use momentum trading in midcap stocks and futures. They're my favorite strategies.

Which timeframes and chart types do you use in your trading?

The tick timeframe is used for intraday trading and the daily timeframe for positional trading. In derivatives, the timeframe for positional trading is one minute.

This is my edge. Charting methods like P&F and renko can help you use the lowest time interval. You can trade even tick timeframe with these charting methods. You can control the number of trades as per your trading style by adjusting the box size or brick size.

The same is true with the end-of-the-day timeframe charts. Instead of plotting weekly or monthly timeframes, increase the box size on a daily timeframe.

Figure 2 shows a tick chart of the Bank Nifty index over a few sessions.

The whole session can be summarized in a few columns at tick level. The box size can be adjusted as per trading style.

You can apply any study to this chart for trend filtration or plot volume. But even basic P&F price patterns can help traders.

Figure 3 shows a renko chart of the Bank Nifty index on a one-minute timeframe. The supertrend indicator is applied on this chart for its simplicity. There are some important price setups on renko charts that can be helpful, but I will skip that discussion.

A key point to note is that this chart is based on a one-minute timeframe and the chart period is of more than five months. The vertical lines separate the days. This example illustrates how even position trading can be done on this type of chart at the lowest time interval.

With these charting methods, your impact cost (that is, the cost of executing the strategy) is minimal. That is a big advantage. Your productivity of trades significantly improves.

What is your rule for exiting trades and taking losses?

We have multiple trading systems and each has different exit mecha-

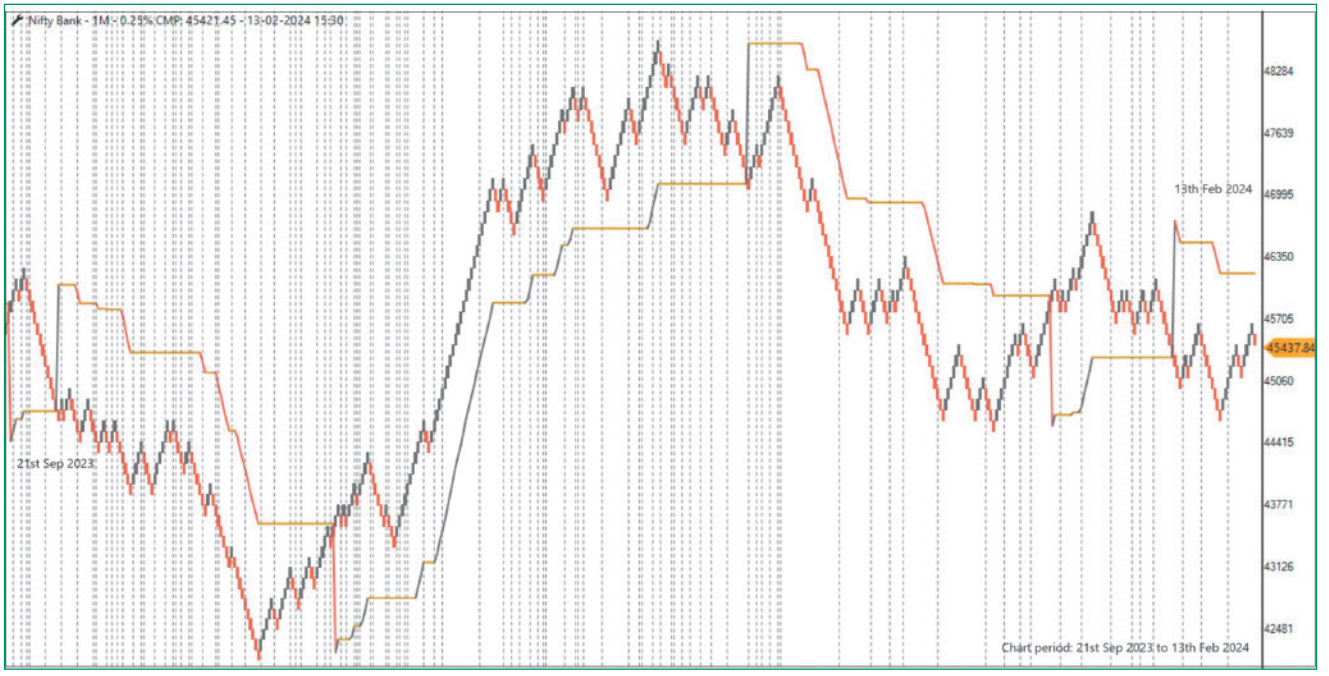


FIGURE 3: RENKO CHART. This demonstrates a one-minute renko chart of the Bank Nifty sector index with the supertrend indicator plotted.

nisms. The philosophy I follow when trading momentum is to ride the trend when momentum is strong. When there is a sign of exhaustion, apply aggressive exit methods. I use a breadth indicator to find signs of exhaustion.

What do you consider to be the most egregious mistakes that self-directed traders make?

Constantly monitoring their profit and loss. The result is emotional trading.

The market is full of traders with decent strategies who would have succeeded had they implemented their strategies effectively. In the majority of cases, they develop strategies but end up not implementing them faithfully due to emotional decision-making. Constantly tracking non-booked P&L is the core reason behind that. I call it "shadow P&L." I explain this concept in my book. Only the booked profit or loss is a real return and that should be tracked periodically. When your decisions are driven by shadow P&L, you cannot execute your trading strategies. The shadow P&L is just a number and means nothing. Most people do not understand this concept and end up trading emotionally.

What was the basis of your work on line break swing trading techniques, and what did you learn about that technique?

I found the construction very interesting. In fact, I was working on some candlestick patterns earlier. Later, I found that line-break charts showed the same thing. I call it line-break instead of three line break because you can also plot two or one line-break charts. I have categorized line-break patterns into different structures.

A line break is a very objective method and presents a different price structure. Interestingly, the first book I wrote was on line-break charts. But the book was full of backtesting and data and it was becoming more of an academic study, so I did not publish it.

What are some of the most useful books you've read since you began your trading journey?

There are so many. Martin Pring, Edwards & Magee, John Murphy, Steve Nison, Jeremy Du Plessis, Thomas Dorsey, A.W. Cohen, Charles Kirkpatrick & Julie Dahlquist, Brett Steenbarger, Alexander Elder, Mark Douglas, Van Tharpe, Nasim Taleb, Yuval Harari, to name a few.

I read so much about philosophy, culture, history, and business. All of these have helped me in many ways as well as in the business of trading. I think about everything I read from both a trading and investing perspective.

Your first book, published in 2018, focused on point & figure charts. Given that some notable books had already been written on that subject by A.W. Cohen, Thomas Dorsey, Jeremy du Plessis, and Victor deVilliers, why did you choose to write on it?

I am a student of all these authors and respect them. I learned this subject from them.

As a practitioner of this subject over a long period of time, I have developed some new concepts. I developed the objectivity part of it and retooled

some concepts in my own way. I wrote a book on that subject to share my learning and experiences.

How is your P&F book different from the others, if at all?

I am more of an objective trader and I strive to eliminate any ambiguity from my setups. That approach is explained in the book.

There are many patterns, price setups, concepts, and trading strategies explained in the book that I developed. I created a number of indicators for the universe of P&F. So my book's approach is different from other authors' approach and I believe it is my contribution to that field of study.

That book was written in 2017. I have developed many other tools and concepts since then. This subject has so much potential that I could talk for hours and explain how you can trade any instrument on earth and in any timeframe using the P&F technique.

Over the course of 2019 through 2022 you penned three more books. What was your objective in writing them?

The books cover the new concepts that I had developed based on my experience in P&F, renko, relative strength, breadth, momentum trading, swing trading, trading mindset, etc. My books are my attempt to share everything with people openly and honestly. I get so many emails saying that my books and work have helped people. That's my biggest asset. I would like to give away everything. I would like to die empty.

Your latest book (**You, Me, And Trading**), published in 2022, focuses on trading psychology. Why did you write it and who was the intended audience?

The book is intended for aspiring traders who are experiencing difficulties in executing their trading and investment strategies.

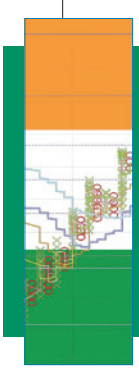
The book is in a conversational format with a younger version of myself. That younger version of myself could be my son when he starts trading. I imagined what questions he would ask and what I would like to tell him. It is my interpretation of the *Bhagwad Gita* [ancient Hindu scripture] from a trading perspective.

How critical is mastering the psychology of trading to an individual's potential for success?

I don't think there is any alternative. Successful execution requires knowing yourself. I think every successful trader would agree on this.

Consistent success requires consistent execution. Successful execution requires consistent practice and discipline. Practice and discipline requires working on yourself. Developing a suitable mindset is critical.

Many people don't realize that they need to develop a mindset that suits their trading style. Or they should define a trading style that suits their approach. For example, having a successful trend-following method means that you don't anticipate reversals. If you keep looking for reversals, you will not be able to ride the trend. You must understand and work on your mindset. Then and only then will you be able to execute what you have learned.



Successful execution requires knowing yourself. I think every successful trader would agree on this. Developing a suitable mindset is critical.

Is there another book in your future, and if so, what will be the subject matter?

I have a couple of topics in mind. I have already begun writing about some unique option trading strategies. I also want to write updated versions of my earlier books. But all this requires more free time than I have day to day!

What do you do for relaxation?

I play mandolin, listen to music, read, and watch movies and documentaries.

Prashant, thank you for providing your market insights based on your years of experience.

S&C contributing writer and ETF columnist Leslie N. Masonson is president of Cash Management Resources, a firm focusing on ETF strategies. He is an active NASDAQ futures trader and the author of six books, including Buy—Don't Hold: Investing With ETFs Using Relative Strength To Increase Returns With Less Risk*;* All About Market Timing *(two editions), and* Day Trading On The Edge. *He can be reached at lesmasonson@yahoo.com or (845) 323-7276.*

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What You Need To Know About Spot Bitcoin ETFs

Spot Bitcoin ETFs Have Finally Arrived: Wait Or Jump In Now?

Investors and traders have been waiting for a decade for spot bitcoin ETFs to arrive. Finally, on January 11, 2024, eleven of these ETFs came to market. Both trading volume and AUM growth ran at a torrid pace over their first eight weeks in existence. Find out which of these ETFs might offer the best bang for the buck.

by Leslie N. Masonson, MBA

Before digging deeper into the recently arrived category of spot bitcoin ETFs, let's first take a step back and define a few key terms that will be used in this article. A cryptocurrency is a "virtual currency that uses cryptography to secure transactions digitally recorded on a blockchain," according to DACFP.com, a site about digital assets. And blockchain "is a ledger that resides on the internet... also called distributed ledger technology." Bitcoin is a cryptocurrency using blockchain technology; bitcoin is a medium of exchange as well as a store of value. Spot is considered the cash price. Spot bitcoin ETFs maintain actual bitcoins, whereas bitcoin futures ETFs do not.

Furthermore, according to Grayscale's online brochure titled *Bitcoin ETF 101*, "Bitcoin ETFs offer investors access to bitcoin with the ease of the ETF wrapper: transparent reporting, convenience, and elimination of the challenges of buying, storing, and safekeeping bitcoin directly... A spot bitcoin ETF, such as GBTC, eliminates the need for investors seeking bitcoin exposure to identify a crypto exchange, create a wallet, link a bank account, and manage storage of their bitcoin. Instead, investors can now invest in an ETF through their existing brokerage account with GBTC... and is also available for purchase through tax-advantaged accounts like IRAs, Roth IRAs, and 401(k)s."

After a decade of regulatory evaluation of spot bitcoin-sponsored ETFs, they finally arrived en masse on January 11, 2024, as the U.S. Securities and Exchange Commission (SEC) finally greenlighted 11 spot bitcoin ETFs for exchange listing and trading, although only 10 started

trading. (Hasdex spot bitcoin ETF (DEFI) has been trading but with exceedingly low volume, so it won't be covered in this review.) The availability of these ETFs means that investors no longer need to buy, hold, and store actual bitcoins. Over the last eight years, the SEC rejected four dozen applications for this ETF category. Interestingly, the U.S. is the laggard in offering this type of ETF, as other countries including Canada, Brazil, and Dubai had previously brought them to market.

On January 10, 2024, the SEC issued a statement from SEC chair Gary Gensler titled "Statement on the Approval of Spot Bitcoin Exchange-Traded Products (ETPs)" approving these ETFs for listing on the exchanges. Here's a key excerpt:

> First, sponsors of bitcoin ETPs will be required to provide full, fair, and truthful disclosure about the products. Investors in any bitcoin ETP that is listed and traded will benefit from the disclosure included in public registration statements and required periodic filings.
>
> Second, these products will be listed and traded on registered national securities exchanges. Such regulated exchanges are required to have rules designed to prevent fraud and manipulation, and we will monitor them closely to ensure that they are enforcing those rules.
>
> Further, existing rules and standards of conduct will apply to the purchase and sale of the approved ETPs. This includes, for example, Regulation Best Interest when broker-dealers recommend ETPs to retail investors, as well as a fiduciary duty under the Investment Advisers Act for investment advisers.
>
> While we approved the listing and trading of certain spot bitcoin ETP shares today, we did not approve or endorse bitcoin. Investors should remain cautious about the myriad risks associated with bitcoin and products whose value is tied to crypto.

These ETFs still lack a regulatory structure similar to that of stocks. Moreover, the SEC has expressed the view that there is "substantially less investor protection than in our traditional securities markets, with correspondingly greater opportunities for fraud and manipulation." In her dissent on the SEC vote to approve these ETFs, SEC commissioner Caroline Crenshaw said, "I am concerned that these products will flood the markets and land squarely in the retirement accounts of U.S. households who can least afford to lose their savings to the fraud and manipulation that appears prevalent in the spot bitcoin markets."

And eight ETFs house their bitcoins with Coinbase.

"Cash or spot" bitcoin trades 24 hours a day, seven days a week, while these ETFs trade only weekdays during U.S. market hours.

This company provides a cryptocurrency exchange as well as a custody service. None of these custodians is a traditional banking institution. Therefore, investors should make sure they understand the risks by reviewing the sponsor's prospectuses and other documents before committing any funds to these vehicles.

Blackrock's CEO Larry Fink recently jumped onboard as a "big believer" in bitcoin after being critical previously, and has referred to the cryptocurrency as a "store of value." Steve Kurz, Global Head of Asset Management at Galaxy Digital, has stated he believes that bitcoin is at the beginning of a crypto asset renaissance.

One of the most vociferous proponents of bitcoin has been Ric Edelman, who founded the RIA firm Edelman Financial Engines. Edelman transitioned from his RIA firm to creating and founding a private company named DACFP (Digital Assets Council of Financial Professionals) in July 2018. The company offers some instructional material on crypto. He commented, "Advisors have to determine which of their clients should invest in these ETFs, and determine the best allocation for them," and indicated that all the usual portfolio management and risk management tools should be applied.

Spot bitcoin ETFs

Spot bitcoin ETFs are structured permitting authorized participants (e.g., financial institutions) to create and redeem shares, thereby aligning the funds' value to that of the assets held. This allows investors to buy and sell these ETFs like a stock at any brokerage firm that offers them on their platform. Recently, both Wells Fargo & Co. and Merrill Lynch indicated that they will offer such ETFs on their brokerage platforms, while Vanguard indicated they will not at this point in time.

On their first day of trading on January 11, the spot bitcoin ETFs experienced heavy trading volume and asset growth that has significantly increased since then. Note that "cash or spot" bitcoin trades 24 hours a day, seven days a week, while these ETFs trade only weekdays during U.S. market hours of 9:30 am to 4 pm EST.

These ETFs still lack a regulatory structure similar to that of stocks.

Following the infamous FTX fiasco, where that popular crypto exchange collapsed in 2022, bitcoin liquidity plummeted about 60%. But now, bitcoin liquidity has returned to more normal levels.

These new spot bitcoin ETFs have attracted not only individuals but also wealth management firms, family offices, and other institutions and money managers that did not have the option of buying and selling cryptocurrencies on the exchanges. Benefits of a spot bitcoin ETF are that investors are not required to purchase, store, and secure the bitcoin, which is cumbersome and costly. According to Edelman, bitcoin has been the most profitable investment in history with a return of 400 million percent since its 2009 inception.

Ticker	Fund Name
GBTC	Grayscale Bitcoin Trust
IBIT	iShares Bitcoin Trust Registered
FBTC	Fidelity Wise Origin Bitcoin Fund
ARKB	ARK 21Shares Bitcoin ETF Ben of Int
BITB	Bitwise Bitcoin ETF Trust
BTCO	Invesco Galaxy Bitcoin ETF
HODL	VanEck Bitcoin Trust
BRRR	Valkyrie Bitcoin Fund
EZBC	Franklin Bitcoin ETF
BTCW	WisdomTree Bitcoin Fund

FIGURE 1: SPOT BITCOIN ETFS. Here you see the names and tickers of the recently available spot bitcoin ETFs. Note that no one sponsor has more than one of these ETFs. Blackrock (iShares), Grayscale, and Fidelity are the big players.

Unexpectedly, over their initial nine days of trading, prices declined about 20–30% before stabilizing and building momentum with a 60% price appreciation through March 1, as public interest in the ETFs has greatly increased. A few other bitcoin ETFs came to market during the 2021 to 2023 period, but those were unique in their structure since they were futures-based, as opposed to the current crop of "spot" (current price) ETFs.

Common characteristics of these ten ETFs are as follows: open-ended; track the price of bitcoin; single asset portfolio; have a similar one-month performance (as of February 16, 2024) of about 19.5%, all within 25 basis points of each other; 1099 tax reporting; listed on either the NYSE Arca, NASDAQ, or Cboe BZX US Equities Exchange; no leverage used.

Figure 1 shows the newly minted 10 ETFs along with their ticker symbols. Note that no sponsoring firm has more than one of these ETFs. Figure 2 provides metrics for the ETFs as of March 1, 2024, obtained from ETFAction.com, a comprehensive ETF website.

Typically, for newly listed ETFs, it takes years to amass significant assets, but occasionally an ETF launch will attract a large amount of attention and assets, such as when a new ETF offers investors a unique opportunity. In the case of spot bitcoin ETFs, they have stormed out of the gate. They've captured boatloads of money, with total AUM just short of $50 billion, an extraordinary showing.

Ticker	Brand Name	Expense Ratio	Custodian	AUM ($MM)	Perf. 1-month	Flows YTD ($MM)	Average Daily Volume	Average Spread	Percent from 2024 low
GBTC	Grayscale	1.50%	Coinbase	$26,603	46.52%	($8,311)	16,002,412	$0.01	329.29%
IBIT	iShares	0.12% for 1st 12 months then 0.25%	Coinbase	$10,009	46.66%	$7,756	19,595,004	$0.01	61.25%
FBTC	Fidelity	0% until July 31, 2024 then 0.25%	Fidelity FDAS	$6,235	46.55%	$318	8,299,799	$0.01	60.72%
ARKB	ARK	0% for first 6 months then 0.21%	Coinbase	$2,106	46.73%	$1,583	2,475,476	$0.02	61.09%
BITB	Bitwise	0% for first 6 months then 0.20%	Coinbase	$1,529	46.82%	$1,136	2,487,317	$0.02	60.96%
BTCO	Invesco	0% for first 6 months then 0.25%	Coinbase	$378	46.65%	$206	432,150	$0.05	61.07%
HODL	VanEck	0% until March 31, 2025 then 0.20%	Gemini	$256	46.56%	$37	412,544	$0.08	60.89%
BRRR	Valkyrie	0% for first 3 months then 0.49%	Coinbase	$187	46.68%	$136	228,456	$0.01	60.79%
EZBC	Franklin	0% for 1st $10 billion of fund's assets then 0.19%	Coinbase	$155	46.79%	$119	257,675	$0.04	61.13%
BTCW	WisdomTree	0% for first 6 months then 0.30%	Coinbase	$50	46.55%	$37	347,379	$0.06	60.94%

ETFAction.com

FIGURE 2: SPOT BITCOIN ETF COMPARISON. The top five ETFs have captured the majority of the assets with huge AUM and high trading volume. In only eight weeks of trading, they more than recovered from their initial eight-day decline.

FIGURE 3: GBTC PRICE PERFORMANCE SINCE EARLY 2015. GBTC was the forerunner to the current crop of spot bitcoin ETFs as a futures-based product. The ETF's price tracks the cash price of bitcoin very closely. It recently closed near its all-time high.

stockcharts.com

A SPECIAL CASE: GBTC

Grayscale Bitcoin Trust (GBTC) is the world's largest and first publicly traded bitcoin ETF. It was created on September 25, 2013 as a closed-end fund. Its price chart is shown in Figure 3. However, on January 11, 2024, it was converted to and listed as a spot bitcoin ETF rather than as a futures-based ETF. It trades on the NYSE Arca. Since its conversion, it has disgorged over $8 billion, leaving its AUM at $26.68 billion as of March 1, 2024. At its peak, it had about $30 billion in assets.

Interestingly, Grayscale's initial application for GBTC to be listed as a spot bitcoin ETF was filed with the SEC in February 2017. In January 2020, it voluntarily becomes the first crypto investment vehicle to be an SEC Exchange Act reporting company. GBTC uses Coinbase as its bitcoin custodian.

AUM, ANNUAL EXPENSE RATIO, AND PERFORMANCE

Clearly, the asset gathering of the big players has been apparent since the ETFs' inception. So far, after eight weeks in the public domain, all ten of these ETFs combined have gathered an astonishing $47.509 billion in AUM with an average expense ratio of 0.22%. Interestingly, five ETFs have garnered the lion's share or 97.8% of the AUM. In first place is Grayscale (GBTC) with $26.6 billion in AUM, followed by iShares Bitcoin Trust Registered (IBIT) capturing $10 billion AUM, followed by Fidelity Wise Origin Bitcoin Fund (FBTC) at $6.2 billion, ARK 21Shares Bitcoin ETF (ARKB) at $2.1 billion, and finally, Bitwise Bitcoin ETF Trust (BITB) at $1.5 billion.

The remaining five have a total combined AUM of only $1.03 billion, but that's still very respectable over this short time period. Their future viability though will depend on how much interest is shown by self-directed investors and traders, financial advisors, institutions, and pension funds. Clearly, their expense ratio and trading volume will be among the deciding factors, along with each sponsoring firm's marketing capability, in addition

After eight weeks in the public domain, all ten of these ETFs combined have gathered an astonishing $47.509 billion in AUM.

When *halving* occurs, the payout for mining a new block of bitcoins is sliced in half.

to their ability to generate AUM.

There is a clearcut difference between these ETFs regarding their annual expense ratios. Six of the sponsors have set their annual expense ratio at 0.0% initially, having decided to absorb this cost in order to gather as many assets as possible during their infancy. These include FBTC, ARKB, BITB, BTCO, BRRR, and BTCW. Meanwhile, IBIT has set a very low 0.12% expense ratio, while HODL and EZBX come in near 0.27%. GBTC Bitcoin Trust (GBTC) is the exception at a whopping 1.50% expense ratio, but more about that later, as it has been in existence since November 2014 as a futures-related ETF before being converted to the spot coin ETF format on January 11, 2024.

So far, the spot bitcoin ETF performance has been stunning. And since these ETFs mirror the spot price of bitcoin, they have all appreciated in value similarly, around 46.5% as of March 1, 2024. In Figure 3, the chart of GBTC, you can also see the price history of the bitcoin cryptocurrency in general, showing its slow start, parabolic rise to $68,789 in November 2021, then the spectacular fall to $17,000 in December 2023, then its latest ascent to above $64,000 intraday on March 1, 2024. Where it goes from here is anyone's guess.

The average price spread on these ETFs is quite low, within $0.01 to $0.02 for the top five and BRRR. This is good news for investors, and especially for traders, as liquidity is an important factor. Notice that HODL at $0.08 is the highest of the bunch, and another reason to shy away from it, with its low inflows.

Cash Flows and Trading Volume

Another area of importance is the clear dissimilarity between these ETFs regarding their cash inflows. In particular, since their January 11, 2024 inception, IBIT has captured 69% of the flows with $7.8 billion of the $11.3 billion, followed by ARKB at $1.6 billion, and in third place is BITB at $1.5 billion. FBTC at $318 million is clearly an outlier among the big boys. Of course, GBTC's outflows of $8.3 billion are due to the availability of the nine other ETFs with lower expense ratios.

HODL and BTCW, both at $37 million inflows, may not last a year against their aggressive competitors, especially if flows turn negative. BTCW in particular, with AUM of $50 million, is the laggard in the group and the most likely to shutter.

As far as daily trading volume, as expected, the top AUM gatherers also dominate here. IBIT leads the pack at almost 20 million shares, followed by GBTC at 16 million shares. FBTC at 8.3 million shares comes in third, while ARKB and BITB battle it out at 2.5 million shares each for a fourth-place finish.

Next Bitcoin Expected Halving Date: April 19, 2024

Bitcoin (BTC) *halving* occurs every four years or approximately after every 210,000 blocks are produced. Its purpose is to control the supply and demand. The first halving occurred on November 28, 2012 when the payout went from 50 BTC to 25 BTC. When halving occurs, the payout for mining a new block of bitcoins is sliced in half. Currently, bitcoin miners receive 6.25 new bitcoins for each block created, but will only receive 3.125 coins per block on April 19.

What does all this mean? This halving process was instituted to ensure scarcity and encourage its value to increase over time. Halving results in a more limited supply. The maximum number of bitcoins that can be mined was preset from the start at 21 million bitcoins. Nearly 18 million bitcoins have already been mined. Based on halving math, one forecast projects that all 21 million bitcoins will be mined by about the year 2140, and that 98% of total bitcoins will be mined by 2032.

Investing and Trading the ETFs

Is now the right time to invest in a spot bitcoin ETF? The answer *could* be "yes," given that many studies have shown that it can be better to go ahead and invest in some securities and funds even at market highs rather than waiting, especially if the investor's time horizon is many years down the road. Edelman recommends a 1–2% stake in spot bitcoin ETFs, as he feels that in the long term, even a small position could give good results as well as offer diversification to a long-term portfolio. Of course, all investors should decide for themselves or with the assistance of their financial advisors as to the appropriateness of this type of ETF for their portfolio, giving consideration to their time horizon and risk tolerance.

Key performance metrics to evaluate, as mentioned earlier, are their AUM, annual expense ratio, daily trading volume, and price spread.

You should also check how and where these ETFs store their stash of bitcoins to ensure you are comfortable

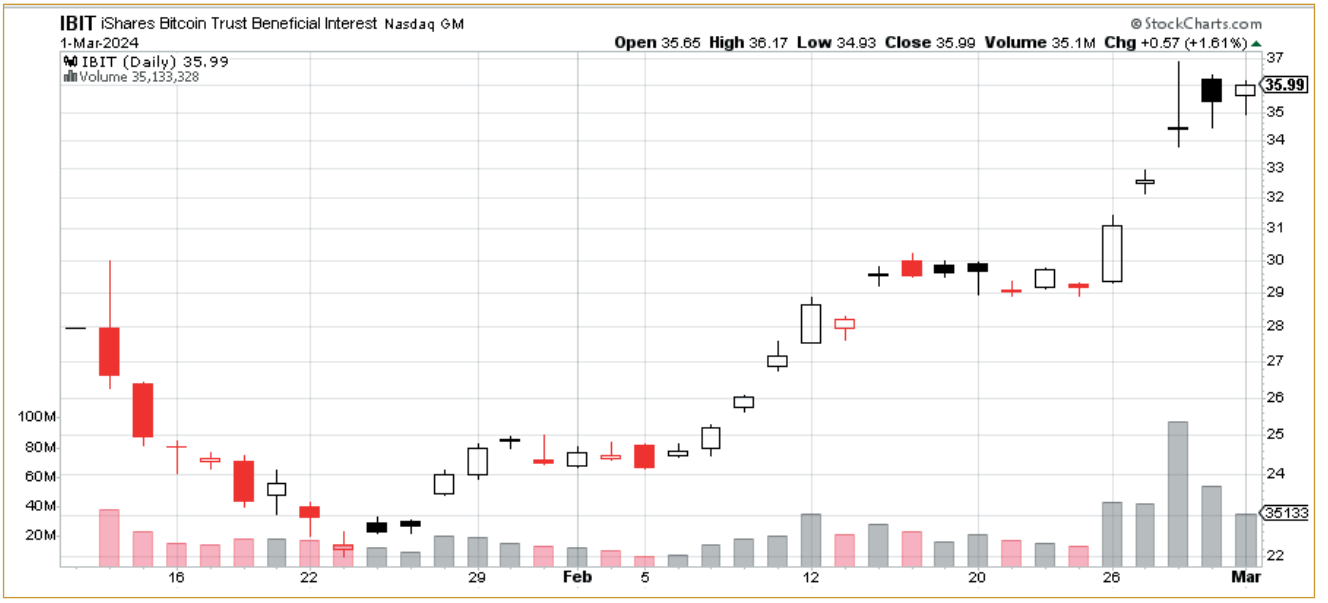


FIGURE 4: IBIT PERFORMANCE SINCE INCEPTION. After an initial 20% decline, this ETF catapulted over 60% higher on increasing volume to close at $35.99 on March 1. Note the huge increase in trading volume on the last five days showing investor enthusiasm.

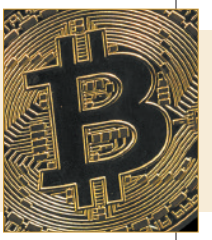
with their security. (Such information should be posted at the ETF sponsor's website.) Edelman points out there have been cases where bitcoins have disappeared. Over $1 billion in fraud has reportedly occurred since 2012. And we all remember the recent crypto disasters such as the case of FTX (which led to the conviction of Sam Bankman-Fried) and the money-laundering case against Binance and its founder Changpeng Zhao.

What about *trading* these ETFs versus investing for the long term? Since these ETFs track the current intraday price of bitcoin, they are well-suited for technical trading using your favorite indicators (such as moving averages, anchor-weighted moving averages, MACD, RSI, stochastics, and ADX, among others). As a digital currency, there are no earnings reports to contend with. It is a pure evaluation of price levels, support and resistance, and other factors. The minute-by-minute and end-of-day daily gains or losses of each ETF are almost indistinguishable from each other.

CONCLUSION

Over the last decade and a half, since the birth of cryptocurrencies, one of which was bitcoin, there has been much controversy and discussion about their value, long-term viability, and acceptance. In particular, financial advisors need to determine whether or not their firms or brokerage firms plan to offer it to investors. Since the spot bitcoin ETF introduction has been spectacular, the odds are that the SEC will approve additional spot coin ETFs based on other cryptocurrencies such as Ether, and also that most financial firms will sooner or later offer them to their clients and on their platforms.

Spot bitcoin ETFs maintain actual bitcoins, whereas bitcoin futures ETFs do not.



After a slow start with an immediate initial price decline of 20% in the first nine days, the spot bitcoin ETF share prices have performed beyond expectations with a 47% one-month performance. Since they all closely track the real-time bitcoin price, the performance figures of the ETFs just follow the trend of the cryptocurrency itself. Some commentators predict significant price appreciation going forward.

Vanguard has decided not offer these ETFs on its platform at this time, to the dismay of some of its millions of clients. But back in 1993 when the first ETFs starting coming out, Vanguard took a similarly conservative route of adoption. Vanguard did not come out with its first ETF until May 25, 2001 with its Vanguard Total Stock Market ETF (VTI), which has since captured $374 billion in assets. Currently, Vanguard offers 87 ETFs with a whopping $2.48 trillion in AUM. In first place is Blackrock with 437 iShare ETFs and $2.715 trillion in AUM.

Fidelity Investments, a privately held company, was even slower than Vanguard in joining the ETF revolution with its first ETF debuting on September 25, 2003 with ticker symbol ONEQ (Fidelity Nasdaq Composite Index ETF). Its current AUM is only $5.96 billion. Currently,

Fidelity has 69 ETFs with a total asset value of $62.8 billion as of March 1, 2024 and an average expense ratio of 0.32%. Compared to Vanguard, Fidelity has captured only 2.4% as much in assets, not a very good showing. However, regarding its new spot coin ETF, Fidelity has entered the arena with FBTC, resulting in a third-place finish with $6.2 billion (whereas Vanguard is currently without an entry). Most likely, Vanguard will eventually decide to offer a spot coin ETF, and its big client base may decide to pile in after their seal of approval. That outcome remains to be seen.

Looking at the top five AUM leaders, GBTC seems to be the one to stay away from, given its excessive annual expense ratio of 1.5%. This is a killer number that will drive assets to its competitors, as over $8 billion has already left its coffers.

IBIT (Figure 4) is the clear winner in this category with over $10 billion in AUM, flows of $7.8 billion, and the most trading volume of all its competitors with almost 20 million shares a day. IBIT hit its current AUM level faster than any other ETF in history. As a side note, only 150 ETFs out of the current 3,400 had reached $10 billion in size. In comparison, SPDR Gold Shares (GLD) required two years to attain that level.

IBIT's 0.12% annual expense ratio is not the lowest but certainly is low, and over time the others with a 0% ratio will most likely institute fees over the next year to adequately cover their expenses. ARKB, BITB, and BITB are also viable candidates, all with good comparable metrics.

Investors and traders should visit the website of any of these ETFs they plan to invest in to review the summary prospectus and look at all the risks. Look also for information on whether the ETF plans to increase their annual expense ratio, or, if those plans aren't revealed, be aware that fees could increase.

Investors should certainly check where the ETF's bitcoins are stored for safekeeping, and whether they have any insurance if the bitcoins disappear one day from the custodian's account.

In the end, *caveat emptor*—it's "buyer beware" if you decide to invest in any of these ETFs for the long haul. Traders, on the other hand, can be more nimble and choose to ride the roller-coaster using their favorite technical tools. Either way, this newly minted type of ETF is likely to remain a very popular vehicle from here on out.

Investors should certainly check where the ETF's bitcoins are stored for safekeeping, and whether they have any insurance if the bitcoins disappear one day from the custodian's account.

S&C contributing writer and ETF columnist Leslie N. Masonson is president of Cash Management Resources, a firm focusing on ETF trading strategies. He is an active NASDAQ futures and ETF trader, and the author of six books including Buy—Don't Hold: Investing With ETFs Using Relative Strength To Increase Returns With Less Risk, *and* All About Market Timing *(two editions), as well as* Day Trading On The Edge. *He can be reached at lesmasonson@yahoo.com or 845 323-7276.*

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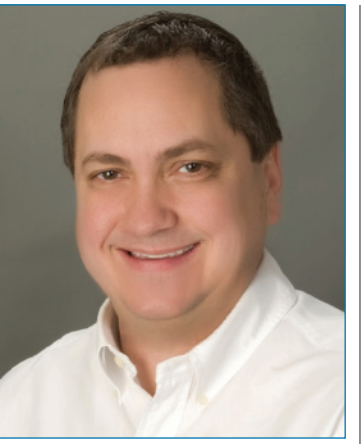
Algo Q&A



Kevin J. Davey

ALGORITHMIC TRADING

Have a question about system or algo trading? Kevin J. Davey has over 30 years of system trading experience. Davey is a full-time trader, and also teaches and consults via his Strategy Factory online workshop (https://kjtradingsystems.com), which was the winner of the 2024 Readers' Choice Award in this magazine for the category of "Trading Schools." Davey is also the author of five books on trading. Send your questions or topic suggestions to Kevin Davey at kdavey@kjtradingsystems.com. Selected questions will appear in a future issue of S&C.

BIGGEST MISTAKE?

I am somewhat new to algo trading, and I'd really like to avoid mistakes most new traders make. Can you point out one big mistake and how to avoid it?

Thanks for the question, it tells me you are going into the algo trading world with eyes wide open. That is really important, as algo trading is tough—just like any type of trading is.

Based on my own experience, and from working with thousands of traders over the years, I'd say the biggest mistake is the "pursuit of perfection." New algo traders are looking for that one strategy that will make them rich, and that never works out well.

The pursuit of perfection is something ingrained in each of us at an early age. We all are taught to do well in school, to strive for "A" grades, to get everything correct. That approach works for education, but not for trading.

In trading, especially algo trading, aiming for perfection is a recipe for disaster. Why? It really all has to do with backtesting. Every algo trader backtests their strategy through an historical database of prices. The general theory is that if a strategy has been profitable in the past, it is more likely than not to be profitable in the future.

While in broad terms this is true—historically profitable strategies do have a tendency to perform better in real time than historically unprofitable strategies—one needs to remember the US government warning "past performance is not indicative of future results." Most people dismiss that warning, at their own peril. Past profits far from guarantee future profits.

So how do backtests lead to mishaps? Algo traders do not know the future, but they can easily backtest the past. Couple that with the "pursuit of perfection" and it leads algo strategy builders to create great-looking backtests. Additional rules and filters, extra optimization, testing and retesting over the same data all combine to get closer and closer to backtesting perfection. Yet that almost always leads to worse real-time performance!

Instead of perfection, an algo trader should strive for "reasonableness."

In trying to make a strategy better via an improved backtest, the inexperienced algo developer actually makes it worse. The problem is that this is not known for weeks or even months, when the strategy falls apart during real-time trading. But rest assured, the more "perfect" the backtest looks, the worse it will perform in the future.

The pursuit of backtest perfection, then, is a huge mistake. And yet psychologically it is so hard to avoid. If you develop a backtest curve that has drawdowns in it, it seems totally reasonable to "engineer" the rules so the drawdown is reduced or eliminated. Perhaps that is why so many engineers, scientists, and technical types fail at algo trading—they don't even realize their whole approach is wrong!

Given that, how does one avoid this backtesting perfection dilemma? First off, a mindset change is in order. Instead of perfection, an algo trader should strive for "reasonableness." The more reasonable a backtest looks, the more likely it will perform about the same going forward. Prolonged and deep drawdowns can be part of this.

Second, testing and retesting strategy variations on the same historical data just leads to curve fitting. The goal should be to test as little as possible. Instead of testing 10 variations of a strategy on all the data, test only one.

Finally, realize that optimizing works great on past data, but it rarely is good at predicting the future. The better the optimization makes the backtest, in general, the worse it will perform in the future.

Becoming a good algo trader is a process. Part of that process is discarding past notions such as the "pursuit of perfection." The sooner that pursuit is abandoned, the closer you'll be to algo trading success.

Futures For You

Carley Garner

INSIDE THE FUTURES WORLD

Want to find out how the futures markets really work? Carley Garner is the senior strategist for DeCarley Trading, a division of Zaner, where she also works as a broker. She has written five books on futures and options trading, with the latest being Trading Commodity Options...With Creativity *(July 2020), as well as* A Trader's First Book On Commodities *(third edition, October 2017) and* Higher Probability Commodity Trading *(July 2016). Garner also authors widely distributed e-newsletters; for a free subscription, visit www.DeCarleyTrading.com. To submit a question, email her at info@carleygarnertrading.com or via www.DeCarleyTrading.com. Selected questions will appear in a future issue of S&C.*

ARE BITCOIN ETFS A BETTER WAY TO PLAY CRYPTOCURRENCY THAN THE OUTRIGHT FUTURES OR SPOT MARKETS? (PART 1 OF 2)

I believe bitcoin ETFs are not the best way to speculate on cryptocurrency should you be inclined to do so. Further, I have reason to believe bitcoin ETFs could be the downfall of the asset class, or at least a hiccup so significant that market participants will be permanently scarred and immune from being sucked into euphoria in the future.

Bitcoin has always been a market that everyone has discussed, but few have participated in. However, bitcoin ETFs make allocating money to the asset easier for the average retail trader. Almost everyone has access to stocks and ETFs via existing brokerage accounts; it is easy to gain it if they don't. A lower barrier to entry seems to have created a second wave of speculation in bitcoin. Those who don't trust crypto brokerages or know how to create cryptocurrency wallets to hold assets are now free to exercise their FOMO via ETF purchases. The tech and crypto mania feels eerily like late 2021, except instead of euphoric speculation in Tesla, meme stocks, NFTs, and crypto, it is Nvidia and bitcoin ETFs.

The finance industry is a sales machine designed to rack up as much fee revenue as possible; ETFs representing relatively shallow markets are just that. They generate profits for exchanges and managers, but the unintended consequences are dysfunctional markets and lives ruined. ETFs are efficient and effective in deep markets with mass participation, such as an SPY ETF that tracks the most widely held stocks on the planet. Still, ETFs created to provide convenient exposure to markets that the masses shouldn't necessarily be participating in, or worse, assets that are not liquid enough to accept investment dollars from all who are interested, are highly concerning.

A lower barrier to entry seems to have created a second wave of speculation in bitcoin.

As a commodity broker who has seen the dysfunction that commodity ETFs can cause to otherwise normally functioning futures markets, I view the hysteria over bitcoin EFTs as an accident waiting to happen. Two notable examples of ETFs suddenly finding mass appeal despite being associated with minimally liquid futures markets are the popular crude oil ETF identified by the ticker USO, and the wheat ETF known by WEAT.

A fund blow-up at USO was a significant driving force pushing oil futures below zero in 2020. In late April 2020, the May futures contract was approaching its last trading day. In normal market conditions, traders can exit the expiring contract and enter a distant expiration futures contract (June and July in this example) without any drama. However, this was an oil market roiling over government-mandated economic shutdowns and a supply war between U.S. shale oil producers and OPEC+ (namely Russia and Saudi Arabia). The shaky fundamental backdrop on top of contract rollover volatility left the door open for chaos. There seemed to be an assumption that oil couldn't trade below zero; unsuspecting traders were buying futures believing their risk was limited to the distance between their entry price and zero, and the USO ETF investors were operating under the same premise. Soon, it was apparent that futures could, in fact, trade in negative territory.

By this time, most retail traders had already been forced out of the May contract via their brokerage firm, but the USO ETF still held some front-month contracts that needed to be rolled. This created an environment of all sellers and no buyers for the May contract, which fell from about $20.00 per barrel early in the day to reach a low of –$40.32 (a decline of about $60.00 from the opening

price). In my view, the oil market was probably in trouble with or without the messy ETF rollover, but it is very unlikely that the May futures contract would have fallen $60.00 in a single trading session without the USO fund liquidation. On a side note, the ETF fully liquidated, went to zero, and then started back up to accept new investors as if nothing had happened.

Similarly, when Russia invaded Ukraine, the popular narrative was that the "world's breadbasket" had been compromised and wheat prices would get a hefty price bump due to short supplies. Every young person with a mobile phone and an online brokerage account seemed to receive notification of the WEAT ETF making a move, and many hit the buy button without fully understanding the details and risk of participating. The WEAT ETF pools investors' money to buy futures contracts. Trading in this ticker jumped from one million to two million shares per week to about 55 million per week, undoubtedly mainly on the buy side.

With so much money flowing into the ETF, the WEAT fund had to buy futures contracts in a market that was not intended for mass speculation and could not absorb the liquidity; it was like pouring a gallon of liquid into a tablespoon, but according to the prospectus it had to be done. The necessity to buy contracts distorted natural price discovery and left financial devastation for most market participants in its wake. As the WEAT ETF aggressively bought futures contracts to comply with obligations to investors, wheat futures spent 6 or 7 trading sessions locked limit up with very few opportunities for traders who were short to exit and those who wanted to be long to enter. In the chaos, prices jumped from about $7.00 per bushel to $14.00 per bushel. Once the last of the forced buys were executed, prices collapsed in a whirlwind of dysfunction. Since then, wheat has continued its downward spiral to a valuation of just over $5.00 per bushel. It is naïve to assume the bitcoin ETF frenzy will end any differently.

On a side note, the ETF fully liquidated, went to zero, and then started back up to accept new investors as if nothing had happened.

Next month we will continue the discussion by pointing out why bitcoin ETFs are attracting so much investment capital and why these reasons might, or might not, be sustainable in the long run.

TOMASINI/MARKET RAP

Continued from page 20

player in systematic trading, while GospelJoe is a data provider often unknown to retail traders because it supplies data to the institutional financial industry and is known for its data quality. Our test revealed that on 1-minute bars, CyberJoe's opening prices correspond to the closing of the 1-minute bar, essentially missing opening data. Comparing tick-by-tick price curves showed that TradeJoe's prices align with GospelJoe's (likely because GospelJoe provides data to the brokerage). However, CyberJoe's data differed significantly from the other two, with highs and lows on short timeframes like 1 or 15 minutes often not matching, let alone openings and closings, which can be influenced by factors other than data quality.

The moral of this article: As always, we don't have winning recipes that produce easy and fast money. We can simply suggest that the litmus test for an intraday futures trading system is to trade the same system with two different brokerages to see if they produce the same result. This will help you to understand the data quality (and many other factors). Otherwise, you're at the mercy of intraday price curves, where highs and lows don't match. And with poor data quality, you can only achieve poor results. While your results may be positive, they won't look like those wonderful equity lines that soar straight to the sky.

The litmus test for an intraday futures trading system is to trade the same system with two different brokerages.

The focus of Traders' Tips this month is John Ehlers' article in this issue, "Ultimate Channels And Ultimate Bands." Here, we present the May 2024 Traders' Tips code with possible implementations in various software.

The code for the following Traders'Tips selections is posted here:

• Traders.com → S&C Magazine → **Traders' Tips**

At Traders.com you can also right-click on any chart to open it in a new tab or window and view the chart at a much larger size.

The Traders' Tips section is provided to help readers implement a selected technique from an article in this issue or another recent issue. The entries here are contributed by software developers or programmers for software that is capable of customization.

TradeStation

✦ TRADESTATION: MAY 2024 TRADERS' TIPS CODE

In his article in this issue, "Ultimate Channels And Ultimate Bands," John Ehlers builds on his prior work of the UltimateSmoother, this time demonstrating its practical application to create two new indicators. The first example draws upon Keltner channels, while the second draws upon Bollinger Bands. In both instances, he showcases the replacement of the conventional moving average with the UltimateSmoother.

The two indicators, along with the $UltimateSmoother function, are shown here:

```
Indicator: Ultimate Channel

{
    TASC MAY 2024
    Ultimate Channel
    (c) 2024 John F. Ehlers
}

inputs:
    STRLength( 20 ),
    Length( 20 ),
    NumSTRs( 1 );

variables:
    TH( 0 ),
    TL( 0 ),
    ROC( 0 ),
    STR( 0 ),
    UpperChnl( 0 ),
    LowerChnl( 0 );

if Close[1] > High then
    TH = Close[1]
else
    TH = High;

if Close[1] < Low then
    TL = Close[1]
else
    TL = Low;

STR = $UltimateSmoother(TH - TL, STRLength);

UpperChnl = $UltimateSmoother(Close, Length)
 + NumSTRs * STR;

LowerChnl = $UltimateSmoother(Close, Length)
 - NumSTRs * STR;

Plot1(UpperChnl, "Upper Channel");
```

FIGURE 1: TRADESTATION. This TradeStation daily chart of the continuous emini S&P (@ES) demonstrates the ultimate channel indicator applied.

FIGURE 2: TRADESTATION. This TradeStation daily chart of the continuous emini S&P (@ES) demonstrates the ultimate bands indicator applied.

```
Plot2(LowerChnl, "Lower Channel");
```

Indicator: Ultimate Bands

```
{
   TASC MAY 2024
   Ultimate Bands
   (c) 2024 John F. Ehlers
}

inputs:
   Length( 20 ),
   NumSDs( 1 );

variables:
   Smooth( 0 ),
   Sum( 0 ),
   Count( 0 ),
   SD( 0 ),
   UpperBand( 0 ),
   LowerBand( 0 );

Smooth = $UltimateSmoother(Close, Length);
Sum = 0;

for Count = 0 to Length - 1
begin
   Sum = Sum + (Close[Count]
    - Smooth[Count]) * (Close[Count] - Smooth[Count]);
end;

if Sum <> 0 then
   SD = SquareRoot(Sum / Length);

UpperBand = Smooth + NumSDs * SD;
LowerBand = Smooth - NumSDs * SD;

Plot1(UpperBand, "Upper Band");
Plot2(LowerBand, "Lower Band");
```

Function: $UltimateSmoother

```
{
   TASC APR 2024
   UltimateSmoother Function
   (C) 2004-2024 John F. Ehlers
}

inputs:
   Price( numericseries ),
   Period( numericsimple );

variables:
   a1( 0 ),
   b1( 0 ),
   c1( 0 ),
   c2( 0 ),
   c3( 0 ),
   US( 0 );

a1 = ExpValue(-1.414*3.14159 / Period);
b1 = 2 * a1 * Cosine(1.414*180 / Period);
c2 = b1;
c3 = -a1 * a1;
c1 = (1 + c2 - c3) / 4;

if CurrentBar >= 4 then
 US = (1 - c1)*Price + (2 * c1 - c2) * Price[1]
 - (c1 + c3) * Price[2] + c2*US[1] + c3 * US[2];

if CurrentBar < 4 then
   US = Price;

$UltimateSmoother = US;
```

Sample charts are shown in Figures 1 & 2.

This article is for informational purposes. No type of trading or investment recommendation, advice, or strategy is being made, given, or in any manner provided by TradeStation Securities or its affiliates.

—John Robinson
TradeStation Securities, Inc.
www.TradeStation.com

✦ WEALTH-LAB: MAY 2024 TRADERS' TIPS CODE

I must say, I was a little reluctant to include these ultimate indicators, since by being "ultimate" they may finally signify the end of John Ehlers' two-decade effort in the coding of technical indicators! But then, I realized that even software applications that purport to be bug-free can somehow still have remarkably long change logs ... so hopefully, we will continue to enjoy more work from Ehlers.

In his article in this issue, titled "Ultimate Channels And Ultimate Bands," Ehlers offers two examples of implementing his UltimateSmoother indicator, an indicator that was introduced in his article last month in this magazine.

These newly implemented indicators are now available to any of the various tools across Wealth-Lab.

Therefore, we can implement and test the trend-following trading strategy that Ehlers mentions as an example in his article. Its rules are to "hold a position in the direction of the UltimateSmoother and exit that position when the price pops outside the channel or band in the opposite direction."

With the building blocks feature of Wealth-Lab 8, trading system development is almost as effortless as asking an AI-powered language model to do it. The proposed idea comes down to the outline of the process you see in Figure 3:

- **Entry.** Buy at market next bar when high crosses above UltimateSmoother (Close,20).
- **Exit.** Sell at market next bar either low crosses below UltimateBandLower (Close,20,2.0) *or* Close crosses under UltimateChannelLower(20,20,2.0).

In Figure 4, you can see some sample trades using the

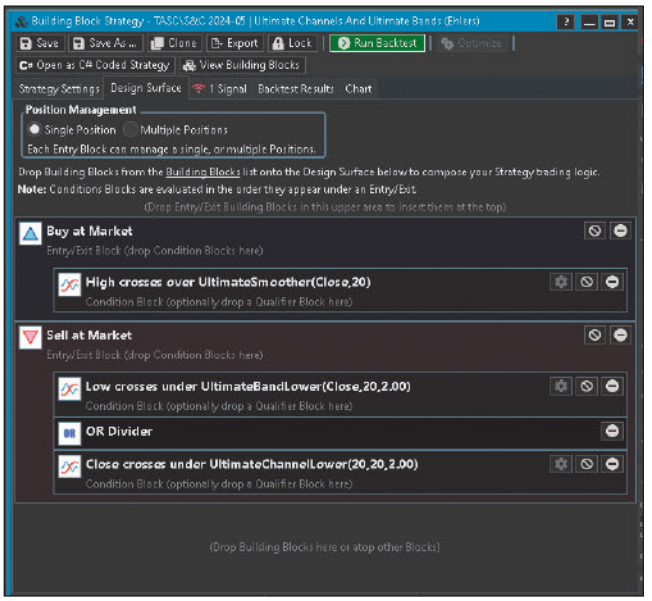


FIGURE 3: WEALTH-LAB. The example trading system's two exit rules implement an automatic following stop.

FIGURE 4: WEALTH-LAB. Here you can see some sample trades taken by the system applied to a daily chart of ES=F (emini S&P 500 continuous futures contract). Data provided by Yahoo! Finance.

emini S&P 500 futures market as an example.

—Gene Geren (Eugene)
Wealth-Lab team
www.wealth-lab.com

FIGURE 5: NINJATRADER. This chart demonstrates the ultimate channel indicator on a chart of the continuous emini S&P 500 futures contract.

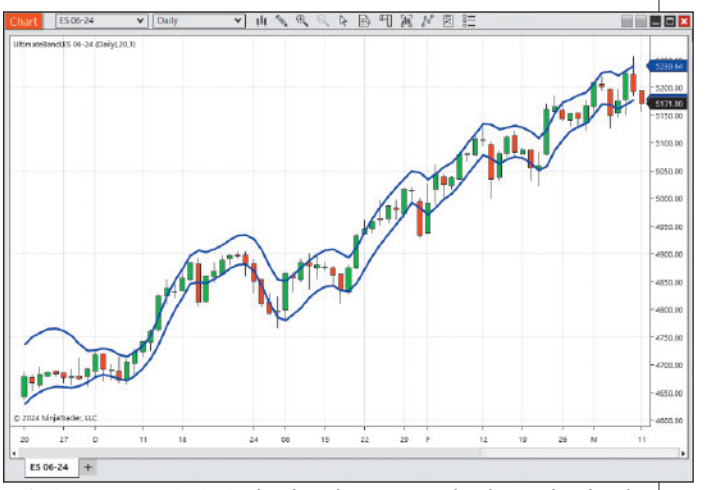


FIGURE 6: NINJATRADER. This chart demonstrates the ultimate bands indicator on a chart of the continuous emini S&P 500 futures contract.

NINJATRADER®

✦ NINJATRADER: MAY 2024 TRADERS' TIPS CODE

The ultimate channel and ultimate bands indicators, which are described in the article "Ultimate Channels And Ultimate Bands" in this issue by John Ehlers, are available for download at the following link for NinjaTrader 8:

NinjaTrader 8: www.ninjatrader.com/SC/MAY2024SCNT8.zip

Once the file is downloaded, you can import the indicator into NinjaTrader 8 from within the control center by selecting Tools → Import → NinjaScript Add-On and then selecting the downloaded file for NinjaTrader 8.

You can review the indicator source code in NinjaTrader 8 by selecting the menu New → NinjaScript Editor → Indicators folder from within the control center window and selecting the file.

Sample charts demonstrating the two indicators are shown in Figures 5 and 6.

NinjaScript uses compiled DLLs that run native, not interpreted, to provide you with the highest performance possible.

—NinjaTrader, LLC
www.ninjatrader.com

TradingView

✦ TRADINGVIEW: MAY 2024 TRADERS' TIPS CODE

The TradingView Pine Script code provided here implements indicators based on the concepts of Keltner channels and Bollinger Bands, as discussed in John Ehlers' article in this issue, titled "Ultimate Channels And Ultimate Bands." In the article, he replaces the traditional moving averages with his UltimateSmoother to mitigate lag in the indicators.

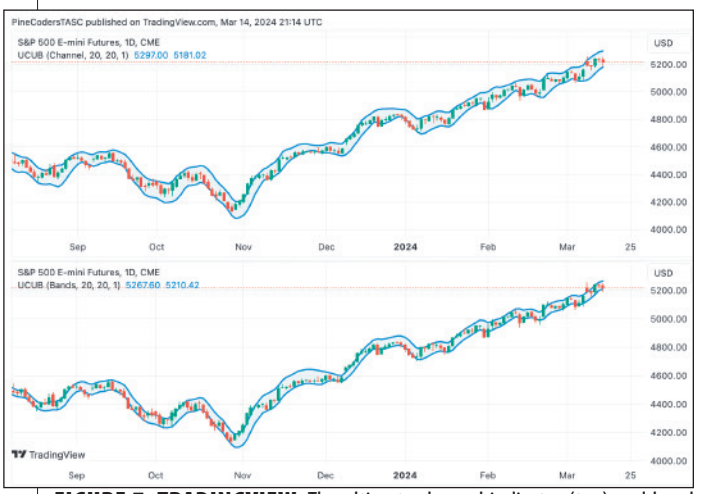


FIGURE 7: TRADINGVIEW. The ultimate channel indicator (top) and band indicator (bottom) is applied here to a daily chart of the emini S&P 500 futures contract.

The UltimateSmoother function was introduced in Ehlers' April 2024 article in this magazine.

The TradingView Pine Script code implementing the two example indicators, *ultimate channels* and *ultimate bands*, is as follows. Example charts showing the ultimate channels and ultimate bands indicators are shown in Figure 7.

```
//  TASC Issue: May 2024 - Vol. 42, Issue 5
//    Article: Ultimate Channels And Ultimate Bands
//             Getting The Lag Out Of Two Classic Indicators
//  Article By: John F. Ehlers
//    Language: TradingView's Pine Script™ v5
// Provided By: PineCoders, for tradingview.com

//@version=5
title  = 'TASC 2024.05 Ultimate Channels and Ultimate Bands'
stitle = 'UCUB'
indicator(title, stitle, true)

// --- Inputs ---
string M00  = 'Channel'
string M01  = 'Bands'
string mode     = input.string(M00, 'Mode:', [M00, M01])
int    length0  = input.int(20,    'Length:')
int    length1  = input.int(20,    'STR Length:')
float  multiplier = input.float(1.0,  'Width Multiplier:')

// --- Functions ---
// @function Applies the UltimateSmoother filter.
// @param   src      Source series.
// @param   period   Critical period.
// @returns us       Smoothed series.
UltimateSmoother (float src, int period) =>
   float a1 = math.exp(-1.414 * math.pi / period)
   float c2 = 2.0 * a1 * math.cos(1.414 * math.pi / period)
   float c3 = -a1 * a1
   float c1 = (1.0 + c2 - c3) / 4.0
   float us = src
   if bar_index >= 4
      us := (1.0 - c1) * src +
            (2.0 * c1 - c2) * src[1] -
            (c1 + c3) * src[2] +
            c2 * nz(us[1]) + c3 * nz(us[2])
   us

// @function Uses the UltimateSmoother to calculate
//           the center of the channel and the smooth
//           true range (STR) that defines the width.
// @param   length    Critical period for the center.
// @param   lengthSTR  Critical period for the STR.
// @param   mult      STR multiplier.
// @returns tuple     Upper and lower channel series.
UltimateChannel(int length, int lengthSTR, float mult) =>
   float mid = UltimateSmoother(close, length)
   float str = UltimateSmoother(ta.tr,lengthSTR) * mult
   [mid + str, mid - str]

// @function Uses the UltimateSmoother to calculate
//           the center of the band.
// @param   length    Critical period.
// @param   mult      Standard deviation multiplier.
// @returns tuple     Upper and lower band series.
UltimateBands(float src, int length, float mult) =>
   float mid = UltimateSmoother(src, length)
   float sd  = ta.stdev(src - mid, length) * mult
   [mid + sd, mid - sd]

// --- Calculations ---
[uc, lc] = if mode == M00
   UltimateChannel(length0, length1, multiplier)
else
   UltimateBands(close, length0, multiplier)

// --- Plotting ---
u = plot(uc, 'Upper', color.rgb(30, 150, 250), 2)
l = plot(lc, 'Lower', color.rgb(30, 150, 250), 2)
fill(u, l,  color.rgb(30, 150, 250, 95))
```

The indicators are available on TradingView from the PineCodersTASC account: https://www.tradingview.com/u/PineCodersTASC/#published-scripts

—PineCoders, for TradingView
www.TradingView.com

✦ NEUROSHELL TRADER: MAY 2024 TRADERS' TIPS CODE

The ultimate channel and ultimate band indicators, as described in John Ehlers' article in this issue titled "Ultimate Channels And Ultimate Bands," can be easily implemented using a few of NeuroShell Trader's 800+ indicators. Simply select "new indicator…" from the *insert* menu and use the indicator wizard to create the following indicators:

```
STR: UltimateSmoother(Sub(Max2(Lag(Close,1),High),Min2(La
g(Close,1),Low)),20)
UpperChannel:   Add2(UltimateSmoother(Close,20), Mul2(1,
STR))
```

FIGURE 8: NEUROSHELL TRADER. This sample NeuroShell Trader chart demonstrates the ultimate channel and ultimate band indicators.

```
LowerChannel:  Subtract(UltimateSmoother(Close,20),
Mul2(1, STR))

SD:  SqrRt(Avg(Pow(Sub(Close,UltimateSmoother
(Close,20)),2),20))
UpperBand: Add2(UltimateSmoother(Close,20), Mul2(1,SD))
LowerBand: Subtract(UltimateSmoother(Close,20), Mul2(1,SD))
```

Note that the UltimateSmoother used here is from Ehlers' article in the April 2024 issue and found in our Traders' Tip from that issue.

Users of NeuroShell Trader can go to the STOCKS & COMMODITIES section of the NeuroShell Trader free technical support website to download a copy of this or any previous Traders' Tips.

—Ward Systems Group, Inc.
sales@wardsystems.com
www.neuroshell.com

✦ REALTEST: MAY 2024 TRADERS' TIPS CODE

In the article "Ultimate Channels And Ultimate Bands" in this issue, John Ehlers follows up his article last month that presented an ultimate smoothing function. This time, he offers two examples of using his UltimateSmoother in indicators. The first example is based on Keltner channels and the second example is based on the Bollinger Bands concept. In both examples, he replaces the traditional moving average with the UltimateSmoother.

The following is coding in text format for use in RealTest (mhptrading.com) to implement the author's technique.

```
Import:
   DataSource:   Norgate
   IncludeList: &ES_CCB
   StartDate:   2/1/23
   EndDate: 2/1/24
   SaveAs:   es.rtd

Settings:
   DataFile: es.rtd
   BarSize:   Daily
```

FIGURE 9: REALTEST. This example chart from RealTest software demonstrates John Ehlers' ultimate bands indicator, which is based on the Bollinger Bands concept but replaces the traditional moving average with Ehlers' UltimateSmoother.

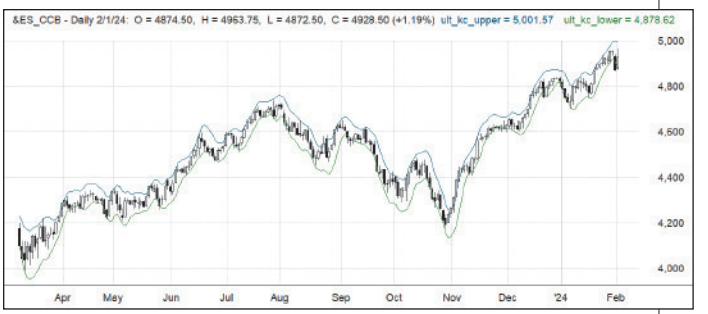


FIGURE 10: REALTEST. This example chart from RealTest software demonstrates John Ehlers' ultimate channel indicator, which is based on the Keltner channel concept but replaces the traditional moving average with Ehlers' UltimateSmoother.

```
Parameters:
   Len: 20
   NumSTRs:   1
   NumSDs: 1

Data:
   // General calculations (independent of item being
smoothed)
   a1:   exp(-1.414*3.14159 / Len)
   b1:   2 * a1 * Cosine(1.414*180 / Len)
   c2:   b1
   c3:   -a1 * a1
   c1:   1 - c2 - c3
   c4:   (1 + c2 - c3) / 4

   // UltimateSmoother of Close
   ult_sm_close: if(BarNum >= 4, (1 - c4) * Close + (2 * c4 - c2)
* Close[1] - (c4 + c3) * Close[2] + c2 * ult_sm_close[1] + c3 *
ult_sm_close[2], Close)

   // UltimateSmoother of True Range
   ult_sm_tr:   if(BarNum >= 4, (1 - c4) * TR + (2 * c4 - c2) *
TR[1] - (c4 + c3) * TR[2] + c2 * ult_sm_tr[1] + c3 * ult_sm_tr[2],
TR)

   // Ultimate Channel (pseudo Keltner channel)
   ult_kc_upper: ult_sm_close + NumSTRs * ult_sm_tr
   ult_kc_lower:  ult_sm_close - NumSTRs * ult_sm_tr

   // Ultimate Band (pseudo Bollinger bands)
```

```
    ult_bb_upper:ult_sm_close + NumSDs * StdDev(ult_sm_
close, Len)
    ult_bb_lower: ult_sm_close - NumSDs * StdDev(ult_sm_
close, Len)

Charts:
    // Ultimate Channel
    ult_kc_upper: ult_kc_upper
    ult_kc_lower:  ult_kc_lower

    // Ultimaate Band
    ult_bb_upper:ult_bb_upper
    ult_bb_lower: ult_bb_lower
```

—Marsten Parker
MHP Trading, Mhptrading.com
mhp@mhptrading.com

✦ ZORRO: MAY 2024 TRADERS' TIPS CODE

In his article in this issue, "Ultimate Channels And Ultimate Bands," John Ehlers follows up his article last month that presented an ultimate smoothing function. In this month's article, he presents two different band indicators that uses his UltimateSmoother.

Band indicators can be used to trigger long or short positions when the price hits the upper or lower band. The first band indicator, the *ultimate channel* indicator, is a straightforward conversion to the C language from Ehlers' EasyLanguage code:

```
var UltimateChannel(int Length,int STRLength,int NumSTRs)
{
  var TH = max(priceC(1),priceH());
  var TL = min(priceC(1),priceL());
  var STR = UltimateSmoother(series(TH-TL),STRLength);
  var Center = UltimateSmoother(seriesC(),Length);
  rRealUpperBand = Center + NumSTRs*STR;
  rRealLowerBand = Center - NumSTRs*STR;
  return Center;
}
```

rRealUpperBand and **rRealLowerBand** are predefined global variables that are used by band indicators in the indicator library of the Zorro platform. For testing the new indicator, we can apply it to an ES chart:

```
void run()
{
  BarPeriod = 1440;
  StartDate = 20230301;
  EndDate = 20240201;
  assetAdd("ES","YAHOO:ES=F");
  asset("ES");
  UltimateChannel(20,20,1);
  plot("UltChannel1",rRealUpperBand,BAND1,BLUE);
  plot("UltChannel2",rRealLowerBand,BAND2,BLUE|TRANSP);
}
```

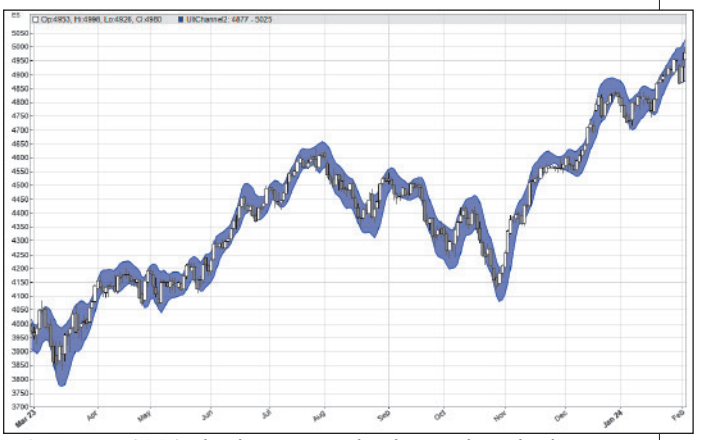


FIGURE 11: ZORRO. This demonstrates the ultimate channel indicator on a chart or S&P 500 emini futures market (ES), implemented in Zorro.

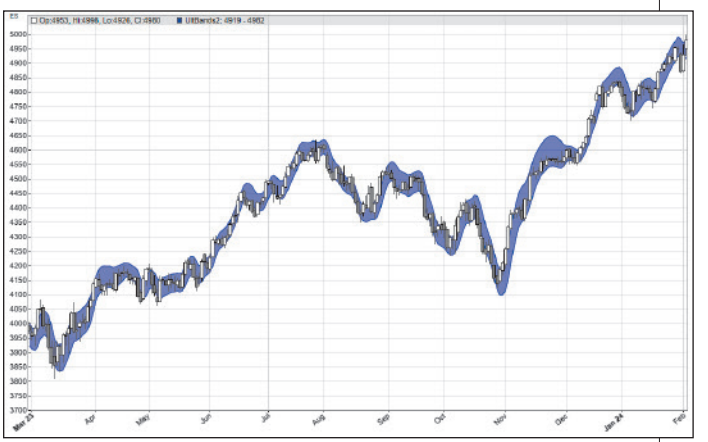


FIGURE 12: ZORRO. This demonstrates the ultimate bands indicator on a chart or S&P 500 emini futures market (ES), implemented in Zorro.

The resulting chart (Figure 11) replicates the chart of the S&P 500 emini futures market (ES) shown in Ehlers' article.

The second band indicator, *ultimate bands*, requires less code than Ehlers' implementation, since lite-C can apply functions to a whole data series:

```
var UltimateBands(int Length,int NumSDs)
{
  var Center = UltimateSmoother(seriesC(),Length);
  vars Diffs = series(priceC()-Center);
  var SD = sqrt(SumSq(Diffs,Length)/Length);
  rRealUpperBand = Center + NumSDs*SD;
  rRealLowerBand = Center - NumSDs*SD;  return Center;
}
```

Again, we can apply it to an ES chart (Figure 12):

```
void run()
{
  BarPeriod = 1440;
  StartDate = 20230301;
  EndDate = 20240201;
  assetAdd("ES","YAHOO:ES=F");
  asset("ES");
```

```
  UltimateBands(20,1);
  plot("UltBands1",rRealUpperBand,BAND1,BLUE);
  plot("UltBands2",rRealLowerBand,BAND2,BLUE|TRANSP);
}
```

We can see that both indicators produce relatively similar bands with low lag.

The code can be downloaded from the 2024 script repository on https://financial-hacker.com. The Zorro platform can be downloaded from https://zorro-project.com.

—Petra Volkova
The Zorro Project by oP group Germany
https://zorro-project.com

✦ EXCEL: MAY 2024 TRADERS' TIPS CODE

In his article in this issue, "Ultimate Channels And Ultimate Bands," John Ehlers shows us how his UltimateSmoother (which was introduced last month in his April 2024 article) may be used to improve on two well-known indicators.

First, he derives an *ultimate channel* indicator (Figure 13) by replacing the two EMAs used in the derivation of Keltner channels with the UltimateSmoother. Once he substitutes his UltimateSmoother for the standard EMA when calculating the smoothed close, it becomes the channel's logical centerline (not plotted here). Then he calculates the ATR component, which becomes the STR (perhaps this stands for "smoothed TR"). STR substitutes for ATR as the plus and minus channel plot offset from the centerline.

Next, he derives an *ultimate bands* indicator (Figure 14). Here, Ehlers replaces the EMA of the close, which is typically used in the derivation of Bollinger Bands, with an UltimateSmoother of the close. This becomes the logical centerline of the bands.

Step 2 creates an interesting variation on the standard deviation calculation, wherein the bar-by-bar value of the ultimate-smoothed close stands in as the bar-by-bar "mean of the sample." So, bar by bar, we take the difference between the close and the smoothed close for that bar. We square and sum those differences for the specified number of preceding bars, then divide by the length and take the square root to arrive at our thus-modified deviation.

This modified deviation becomes the plus and minus band plot offset from the centerline.

To download this spreadsheet: The spreadsheet file for this Traders' Tip can be downloaded from www.traders.com in the Traders' Tips area. To successfully download it, follow these steps:

- Right-click on the link to the Excel file, then
- Select "save target as" to place a copy of the spreadsheet file on your hard drive.

—Ron McAllister
Excel and VBA programmer
rpmac_xltt@sprynet.com

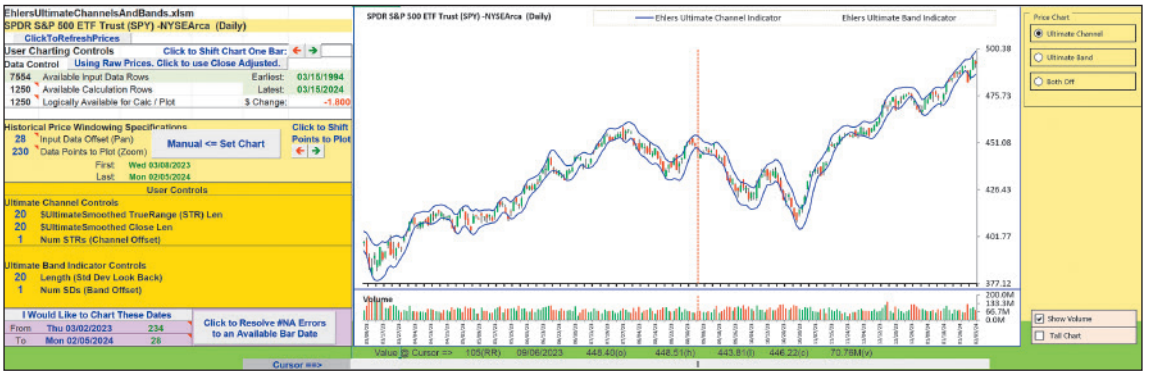


FIGURE 13: EXCEL. This chart demonstrates John Ehlers' ultimate channel indicator.

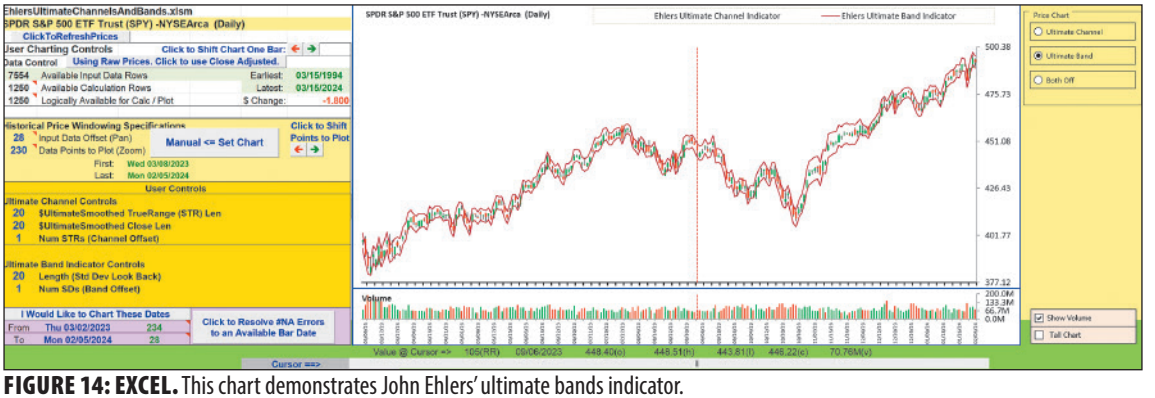


FIGURE 14: EXCEL. This chart demonstrates John Ehlers' ultimate bands indicator.

KAEPPEL

Continued from page 7

the hedge
- We retain unlimited profit potential on 100 shares if the stock soars
- Our maximum potential loss is limited if the stock collapses

The chart in Figure 4 displays the equity curve for the collar position at expiration versus the equity curve for the long 500 shares of stock position alone (which is a straight line—for each $1 rise or fall in the price of NVDA shares, the stock position gains or losses $500).

This position is essentially a no-cost way to hedge against a massive selloff in the stock price.

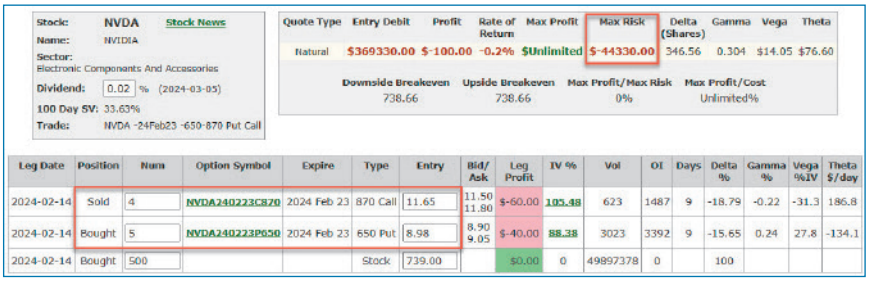
The bottom line:

- If the stock soars, the investor enjoys a reduced amount of unlimited profit potential
- If the stock plummets, the collar position limits the loss below $650 a share
- In between, the investor has $170 more profit potential (from receiving a credit on the option position)

EPILOGUE

After the close on February 21st, NVDA announced favorable earnings and the stock rallied sharply. As of option expiration on February 23, NVDA shares closed at $788.17 a share. As a result, both the 870 call sold and the 650 put purchased expired worthless. A trader who had hedged using the example above:

- Would still hold 500 shares of NVDA (with an additional $24,585 open profit, since the stock rallied from $739 to $788.17)
- Earned a modest credit of $170 from the collar position
- Enjoyed the peace of mind of limited risk going through the earnings announcement.



Stock:	NVDA	Stock News
Name:	NVIDIA	
Sector:	Electronic Components And Accessories	
Dividend:	0.02 %	(2024-03-05)
100 Day SV:	33.63%	
Trade:	NVDA -24Feb23 -650-870 Put Call	

Quote Type	Entry Debit	Profit	Rate of Return	Max Profit	Max Risk	Delta (Shares)	Gamma	Vega	Theta
Natural	$369330.00	$-100.00	-0.2%	$Unlimited	$-44330.00	346.56	0.304	$14.05	$76.60

Downside Breakeven	Upside Breakeven	Max Profit/Max Risk	Max Profit/Cost
738.66	738.66	0%	Unlimited%

Leg Date	Position	Num	Option Symbol	Expire	Type	Entry	Bid/Ask	Leg Profit	IV %	Vol	OI	Days	Delta %	Gamma %	Vega %1V	Theta $/day
2024-02-14	Sold	4	NVDA240223C870	2024 Feb 23	870 Call	11.65	11.50 11.80	$-60.00	105.48	623	1487	9	-18.79	-0.22	-31.3	186.8
2024-02-14	Bought	5	NVDA240223P650	2024 Feb 23	650 Put	8.98	8.90 9.05	$-40.00	88.38	3023	3392	9	-15.65	0.24	27.8	-134.1
2024-02-14	Bought	500			Stock	739.00		$0.00	0	49897378	0		100			

FIGURE 2: TRADE PARTICULARS FOR THE EXAMPLE COLLAR POSITION. A "collar" involves selling a call option and using the proceeds to buy a put. In this "open collar" trade example, four call options are sold and five puts are bought based on 500 long shares of the underlying stock, NVDA. In the "open collar," fewer calls than puts are used in order to retain upside profit potential.

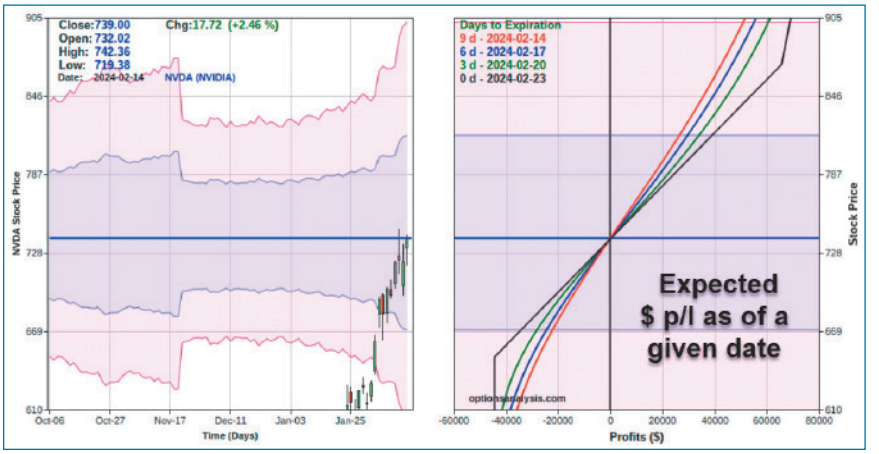


FIGURE 3: RISK CURVES FOR THE EXAMPLE COLLAR POSITION. Here you see the risk curves for the collar trade from Figure 2. The risk curves show the expected profit/loss (P/L) for the option position based on the price of the underlying shares as of four different dates leading up to option expiration. The black line represents option expiration day.

FIGURE 4: EQUITY CURVES, COLLAR POSITION VS. EQUITY POSITION. At right you see the equity curve for the collar position at expiration versus the equity curve for the long stock position (a straight line.)

This position is essentially a no-cost way to hedge against a massive selloff in the stock price.

Stella Osoba

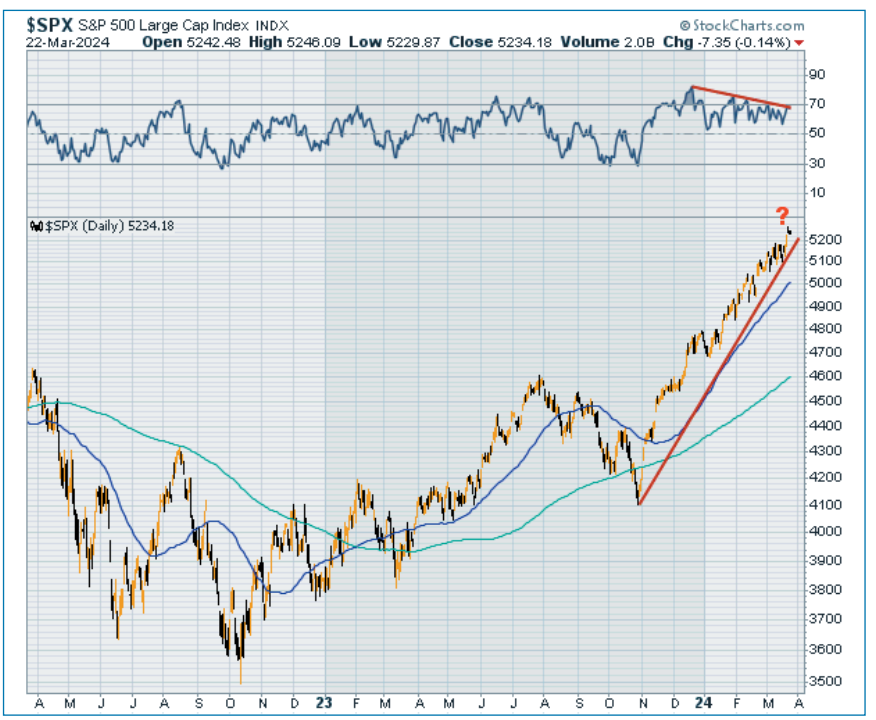
CHARTING THE MARKETS

Stella Osoba, CMT, Esq., is an attorney, trader, and financial writer in New York, NY, and is also the Senior Editor, Trading and Investing, for Investopedia.com. Her work in financial litigation involving regulatory bodies and large multinational corporations led to an interest in the financial markets, then technical analysis and the psychological aspects of market behavior. She earned a CMT charter in 2013 and was a director-at-large on the board of the CMT Association for four years. This column will focus on recognizing and applying technical chart patterns to trading with flexibility and astuteness for better decision-making in trading. She can be reached at stellaosoba@gmail.com.

HOW FEARFUL ARE YOU?

We often fear that which we cannot control. Fear is a powerful universal emotion that starts in the brain and spreads to capture the emotions, causing reactions that range from mild unpleasant symptoms to horrific, overwhelming paralysis. Fear is such a powerful emotion that it is often used by those seeking to dominate others to control behavior. So, what is the relationship between fear and our trading behavior?

First, we must recognize that we are constantly being told by the media, politicians, and other agents to be fearful and what to fear. In fact, the use of fear as a method of mind control is so prevalent in our society that we often do not recognize that we are being programmed to constantly live in fear. Look at any news headlines, listen to politicians seeking to convince you why you should vote for them, observe how sales people will often use fear to motivate behavior. In politics, fear is often used as a tactic to pull voters to a particular candidate or to push votes away from another. Quite simply, fear is used so often because it works. Fear induces the emotion that produces a rationale for the behavior that follows. That behavior is what we believe will prevent that which causes us fear from happening. But in reacting to our fears, we have missed a significant step. The step is the gap between that which produces fear and our ability to rationalize the reason for the fear.



STOCKCHARTS.COM

FIGURE 1: ANTICIPATION VS OVER-ANTICIPATION. In this daily chart of the S&P 500, you can see a sustained uptrend since November 2023. Price will inevitably reverse at some point in time, but over-anticipating it will interfere with a well-thought-out trading plan. Better to wait for actual price action and confirmation signals of the price action.

OUR LYING BRAINS

When we can rationalize something, and it sounds like it makes sense, then we tend to believe it is true. So, when we feel uncomfortable about something we are told, the very feeling of discomfort often causes us to believe the reason for the discomfort and therefore the "truth" of the cause of the discomfort. Say, for instance, that someone tells you that Covid-19 vaccines can cause you to turn magnetic. With no other knowledge about it, and if it comes from someone we had no reason *not* to believe, we may very

We, more than many others, need to constantly be vigilant about the messages and signals our brains are sending us.

well believe the conspiracy theory, and we behave accordingly. As our fear signals are turned on, we seek to protect ourselves (in this example, by not getting the vaccine). The same might happen in other situations.

Our fear impulse allows our brain to believe the stories we hear. In other words, we are unconsciously saying to ourselves, *I feel fear, so it must be true*.

Studies have shown that as much as 90% of what we fear, or 9 times out of 10, the things we fear are not real, not true, or won't actually happen. But the strong emotional response we feel makes us believe that it *is* real and *will* happen, even when that's not the case.

Much of the time, we do not even take an accounting. Once the reason for our fear is over, we quickly forget that we ever had the fear in the first place. We do not revisit the fear and examine whether it was even true. Sometimes we may even lie to ourselves, pretending we were not really fearful all along. Society teaches us to reward strength and bravery, so what benefit is there in acknowledging fear, which is perceived as weakness?

I hear you asking, so? What has all of this got to do with trading? *Everything.*

STAY IN THE GAP

As traders, we must learn to move our perceptions as close to reality as possible. We, more than many others, need to constantly be vigilant about the messages and signals our brains are sending us. One way to do this is to *stay in the gap*. The gap is the space between perception and reaction. When we look at our charts or hear commentary on the markets, it is essential that we not react or overreact, as many other market participants inevitably will. Stocks rise and fall, price reactions and price reversals will occur. Commentators are paid to opine on the markets. Analysts are paid to give predictions about stocks. Stock market news outlets offer commentary about unusual market behavior and make guesses about it. The one thing they all have in common is that they are likely to be wrong often. Therefore, it is essential to pay more attention to your plan and your charts than to any of the noise.

As we can see in Figure 1, a daily chart of the S&P 500, we have been in a sustained uptrend since November 2023 (see the trendline). The 50-day moving average is below price and moving up along with it, the 200-day moving average is below the 50-day moving average and moving upwards also. The negative divergence that price has formed with the RSI is concerning, but remember that negative divergence is essentially only that price momentum is slowing, therefore the rise is not confirmed by the RSI. This could potentially lead to a price reversal. We also know logically that price will eventually reverse. But acting in fear of this eventuality is not the best way to trade. It makes more sense to be aware it could happen, stay vigilant, and trade our plan.

Fear induces the emotion that produces a rationale for the behavior that follows.

We cannot know if the next price decline will be a reaction or a reversal. But if we stay in the gap—that space between perception and reaction—we can simply wait and allow price to show us what it will do. We can choose to act only when we have confirmation of price signals. We don't need to fear the next reaction or reversal if we have a plan in place for any eventuality. We can choose to ignore the commentators, the talking heads, and the fortune tellers.

UNGER/VOLATILITY

Continued from page 19

He is a four-time World Trading Champion (2008, 2009, 2010, and 2012), an honorary member of SIAT (Italian Society of Technical Analysis, a branch of IFTA), and speaks throughout Europe, America, Australia, and Asia. He may be reached at Andrea@UngerAcademy.com. The Unger Academy provides services to traders, including individuals, to help them improve their approach to trading (more information can be found at https://autc.pro/tasc).

FURTHER READING

Unger, Andrea [2021]. *The Successful Trader's Guide To Money Management: Proven Strategies, Applications, And Management Techniques*, Wiley Trading.

_____ [2021]. *The Unger Method: The Winning Strategy Of The 4-Time World Trading Champion*, The Boss Books.

‡TradeStation, ‡MultiCharts

‡See Editorial Resource Index

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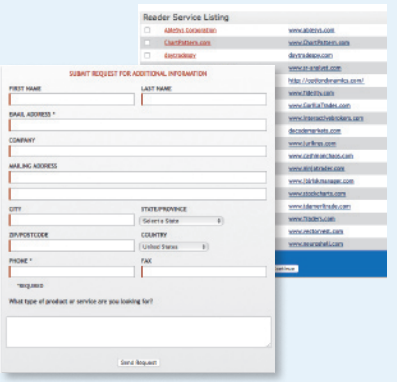

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Trading liquidity is often overlooked as a key technical measurement in the analysis and selection of commodity futures. The following explains how to read the futures liquidity chart published by *Technical Analysis of* STOCKS & COMMODITIES every month.

COMMODITY FUTURES

The futures liquidity chart shown below is intended to rank publicly traded futures contracts in order of liquidity. Relative contract liquidity is indicated by the number of dots on the right-hand side of the chart.

This liquidity ranking is produced by multiplying contract point value times the maximum conceivable price motion (based on the past three years' historical data) times the contract's open interest times a factor (usually 1 to 4) for low or very high volumes. The greatest number of dots indicates the greatest activity; futures with one or no dots show little activity and are therefore less desirable for speculators.

Courtesy of CBOT

All futures listed are weighted equally under "contracts to trade for equal dollar profit." This is done by multiplying contract value times the maximum possible change in price observed in the last three-year period. Thus, all numbers in this column have an equal dollar value.

Columns indicating percent margin and effective percent margin provide a helpful comparison for traders who wish to place their margin money efficiently. The effective percent margin is determined by dividing the margin value ($) by the three-year price range of contract dollar value, and then multiplying by one hundred.

STOCKS

Trading liquidity has a significant effect on the change in price of a security. Theoretically, trading *activity* can serve as a proxy for trading liquidity and equals the total volume for a given period expressed as a percentage of the total number of shares outstanding. This value can be thought of as the turnover rate of a firm's shares outstanding.

Trading Liquidity: Futures

Commodity Futures	Exchange	% Margin	Effective % Margin	Contracts to Trade for Equal Dollar Profit	Relative Contract Liquidity
S&P 500 E-Mini (Jun '24)	CME	4.9	14.6	3	•••>>>
10-Year T-Note (Jun '24)	CBOT	2.1	9.4	11	••>
Ultra T-Bond (Jun '24)	CBOT	5.1	8.4	4	•••>
5-Year T-Note (Jun '24)	CBOT	1.4	8.6	16	•••>
Ultra 10-Year T-Note (Jun '24)	CBOT	2.7	8.2	7	•••>
30-Year T-Bond (Jun '24)	CBOT	3.6	9	6	•••>
2-Year T-Note (Jun '24)	CBOT	0.6	7.8	17	••
Nasdaq 100 E-Mini (Jun '24)	CME	5.3	12.2	2	•••
Natural Gas (May '24)	NYMEX	34.1	7.3	3	•••
Gold (Jun '24)	COMEX	4.4	16.5	5	•••••••••••••••••••••••••••••••
Soybean Meal (May '24)	CBOT	1	1.8	2	•••••••••••••••••••••••••••••
Russell 2000 E-Mini (Jun '24)	CME	3.4	15.6	6	••••••••••••••••••••••••••••
Soybean (May '24)	CBOT	2.2	4.5	5	•••••••••••••••••••••••••
Crude Oil WTI (May '24)	NYMEX	8.9	14.7	6	•••••••••••••••••••••••
3-Month SOFR (Dec '24)	CME	0.1	2.9	25	•••••••••••••••••
Corn (May '24)	CBOT	6.7	7.2	14	••••••••••••••••
Euro FX (Jun '24)	CME	1.7	13.1	16	•••••••••••••••
ULSD NY Harbor (May '24)	NYMEX	8.7	8.6	3	••••••••••••••
Gasoline RBOB (May '24)	NYMEX	7.7	12.5	4	•••••••••••
Wheat (May '24)	CBOT	9.5	5.9	6	•••••••••••
Cocoa (May '24)	ICE/US	8.1	10.4	4	••••••••
Dow Futures Mini (Jun '24)	CBOT	4.6	16.6	5	•••••••
Live Cattle (Jun '24)	CME	3.8	10.1	10	•••••••
Hard Red Wheat (May '24)	KCBT	8.4	6	7	••••••
Palladium (Jun '24)	NYMEX	13.8	5.8	1	••••••
Silver (May '24)	COMEX	7.6	25.9	8	••••••
Cotton #2 (May '24)	ICE/US	7.1	10.2	9	•••••
High Grade Copper (May '24)	COMEX	4.4	17.3	11	•••••
S&P 500 VIX (Apr '24)	CFE	42.8	27.4	13	•••••
Sugar #11 (May '24)	ICE/US	8.8	25.7	32	•••••
Australian Dollar (Jun '24)	CME	2.4	11.8	21	••••
British Pound (Jun '24)	CME	2.6	15	20	••••
Coffee (May '24)	ICE/US	9.4	24.3	10	••••
Mexican Peso (Jun '24)	CME	4.3	17.7	39	•••
Bitcoin Futures (Mar '24)	CME	24.5	31	1	••
Canadian Dollar (Jun '24)	CME	1.5	11.4	29	••
Canola (May '24)	ICE/CA	5.6	6.1	24	••
Crude Oil Brent (F) (Jun '24)	NYMEX	8.5	14	5	••
Feeder Cattle (May '24)	CME	3.7	7.6	5	••
Lean Hogs (Jun '24)	CME	4.1	11.2	19	••
Nasdaq 100 Micro (Jun '24)	CME	5.3	12.2	17	••
Platinum (Jul '24)	NYMEX	6	15.1	15	••

CBOT	Chicago Board of Trade, Division of CME
CFE	CBOE Futures Exchange
CME	Chicago Mercantile Exchange
COMEX	Commodity Exchange, Inc. CME Group
ICE-EU	Intercontinental Exchange-Futures—Europe
ICE-US	Intercontinental Exchange-Futures—US
KCBT	Kansas City Board of Trade
MGEX	Minneapolis Grain Exchange
NYMEX	New York Mercantile Exchange

2405

Trading Liquidity: Futures is a reference chart for speculators. It compares markets according to their per-contract potential for profit and how easily contracts can be bought or sold (i.e., trading liquidity). Each is a proportional measure and is meaningful only when compared to others in the same column.

The number in the "Contracts to Trade for Equal Dollar Profit" column shows how many contracts of one commodity must be traded to obtain the same potential return as another commodity. Contracts to Trade = (Tick $ value) x (3-year Maximum Price Excursion).

"Relative Contract Liquidity" places commodities in descending order according to how easily all of their contracts can be traded. Commodities at the top of the list are easiest to buy and sell; commodities at the bottom of the list are the most difficult. "Relative Contract Liquidity" is the number of contracts to trade times total open interest times a volume factor, which is the greater of:

$$1 \text{ or } \exp\left(\frac{\ln(volume)}{\ln(5000)}\right) - 2$$

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If it's trading advice you seek, then track records are essential, preferably records monitored by third parties. References should also be checked, and if publications are involved, back issues should be scanned. Even then, a lengthy observation period following the advisor's rationale and recommendations is prudent. Commit money to trades only when you are ready to follow the advice thoroughly: You'll only have yourself to blame if you cherry-pick trades and come up with results differing from the advisor's.

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2.	Top Guns Trading	Online Investment Services, LP
3.	Real time trading signals E-mini S&P 500	Daytraders Bulletin
4.	Jake Bernstein's Weekly Futures Trading Letter	MBH Commodity Advisors
5.	Lowry's Market Trend Analysis (Daily)	Lowry Research Corporation
6.	indexArb	indexArb
7.	daytradespy.com	daytradespy
8.	VRTrader.com Silver	VRTrader.com
9.	HotCandlestick, Daily Candlestick Chart Analysis	HotCandlestick.com, LLC
10.	Nison candlestick advisory service	Steve Nison's Candlecharts.com Inc.

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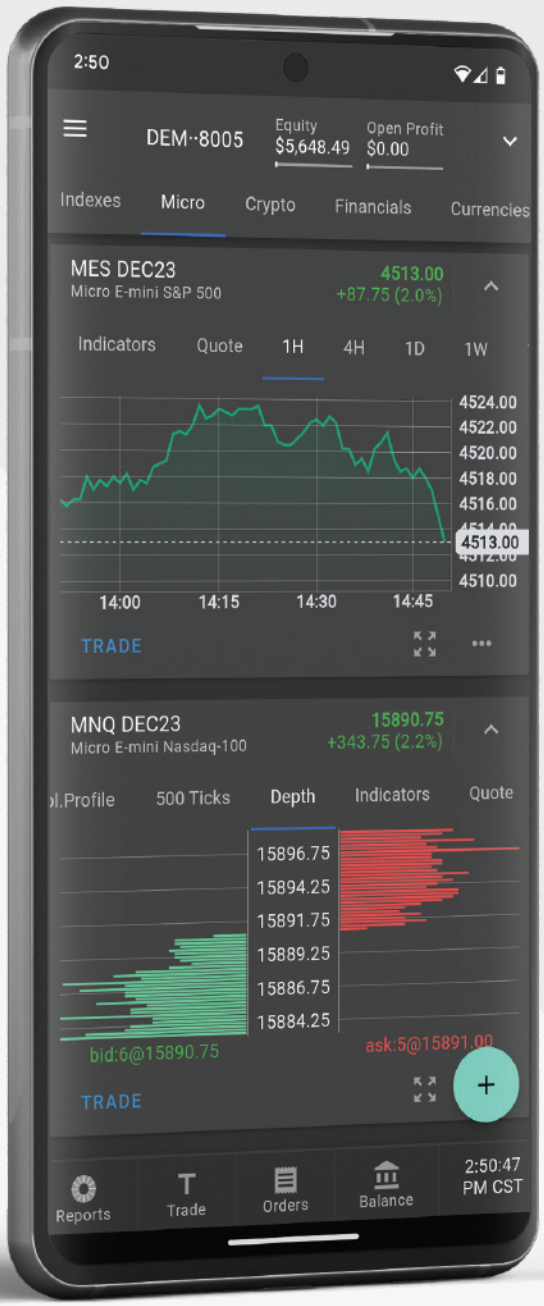

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